RAILWAY AGE

THE STANDARD RAILROAD WEEKLY FOR ALMOST A CENTURY

JUNE 25, 1951

For inauguration of the famous "CHAMPION," the Atlantic Coast Line purchased the first of its fleet of General Motors Diesel locomotives in 1939. Today—with 512 GM units in service or on order, and with complete dieselization as its goal—the Coast Line is providing passengers and shippers alike faster, more dependable transportation, keyed to current expansion in the growing territories it serves.

ELECTRO-MOTIVE DIVISION

GENERAL MOTORS • LA GRANGE, ILLINOIS
HOME OF THE DIESEL LOCOMOTIVE

*In Canada: GENERAL MOTORS DIESEL, LTD., LONDON, ONTARIO*

GENERAL MOTORS LOCOMOTIVES

# POSITIVE DOSAGE CONTROL and WEED KILLING ACTION

## THE *Nalco* SYSTEM of WEED CONTROL

SPRAYING Nalco's H-170 "top-and-root" weed control with one of Nalco's new *labor-saving* Weed Control Cars provides positive dosage regulation, as well as complete records for future reference! H-170 is sprayed directly from tank car without mixing or dilution. It assures a complete top kill of all succulent vegetation, and extensive root kill to retard re-growth. Rainfall after application will not reduce H-170 effectiveness . . . Safe to use where livestock may be grazing . . . Will not disrupt track signal systems, or contaminate water supplies.

Write for detailed information on H-170 and the complete Nalco System of Weed Control.

**NATIONAL ALUMINATE CORPORATION**
6200 W. 66th Place • Chicago 38, Illinois
*Canadian inquiries should be addressed to Alchem Limited, Burlington, Ontario*

**Top illustration shows Nalco Weed Control Car, with three-bank, 22-feet-wide sprays, and an additional 13-foot side spray boom for sidings. Lower photo shows operating controls of Spray Car. 1 Recording speedometer, 2 Recording H-170 flow meter, 3 Nozzle bank control valves for pinpoint spraying accuracy, 4 Left-side spray boom control, 5 Spray manifold pressure gauge, 6 Nalco Meter-Chem main control valve 7 Indoor-outdoor thermometers, 8 Timing clock. Not shown are intercommunicating telephone equipment for direct contact between Nalco Spray Car and work train locomotive, and direct-connected 50-foot auxiliary hose reel and spray nozzles for off-track spraying.**

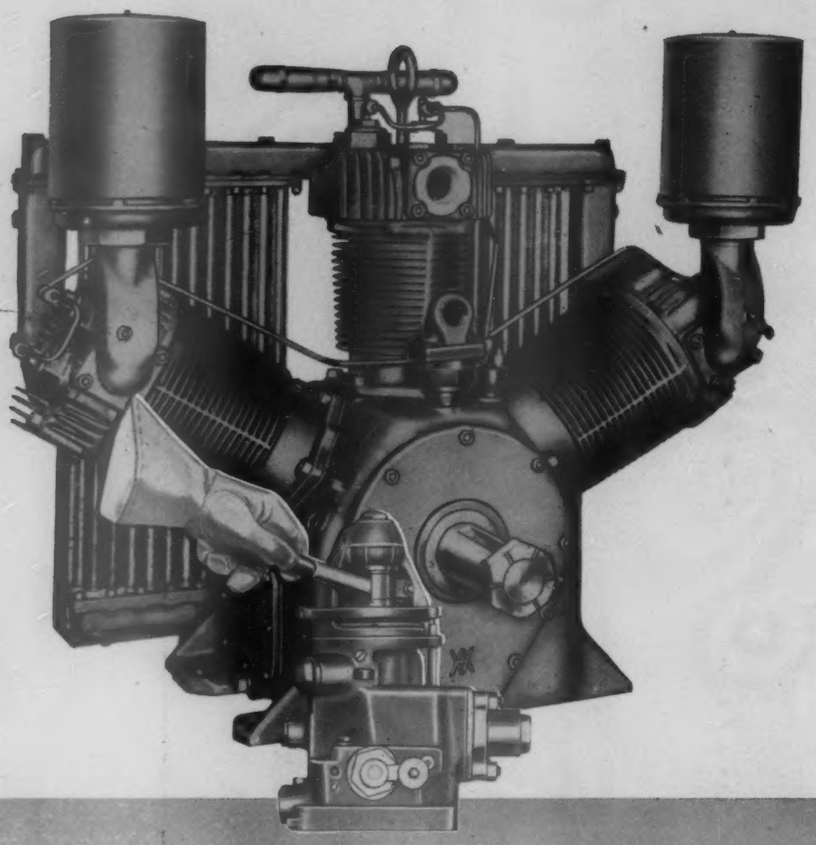
**THE *Nalco* SYSTEM • Serving Railroads through Practical Applied Science**

UNENDING RESEARCH =QUALITY

W.H. MINER, INC.
CLASS A-22-XL
AAR 1941
APPROVED 1947
PATENTED

Class

# Westinghouse CD Compressors



## Put DEPENDABILITY behind every Brake Application

Westinghouse Brake equipment asks no favors on any assignment—*except an unfailing supply of air.* That's the first requirement in modern train control, and no gamble with complete dependability can ever be justified.

Westinghouse CD compressors were developed to provide Diesel units with the same completely reliable air supply as the Westinghouse Steam Driven compressors are continuing to give through years of rugged service. Every feature reflects the intimate knowledge of railroad requirements and operational problems gained in over 80 years of close cooperation with the nation's leading transportation system . . .

1. Radiator-type intercooler between high pressure and low pressure cylinders reduces temperature of discharge air and increases efficiency.
2. Full-pressure type lubrication system maintains even, constant flow of filtered oil to connecting rod crankshaft bearings and wrist-pin bearings.
3. Throw-off of oil from connecting rod bearings lubricates cylinder wall and also main crankshaft ball bearings. Oil pressure relief valve "meters" oil in accordance with compressor speed.

Westinghouse Air Brake Co.

WILMERDING, PA.

*Brakes are Basic to Railroad Progress*

Vol. 130, No. 25 June 25, 1951

# RAILWAY AGE

With which are incorporated the Railway Review, the Railroad Gazette, and the Railway-Age Gazette. Name Registered in U. S. Patent Office and Trade Mark Office in Canada.

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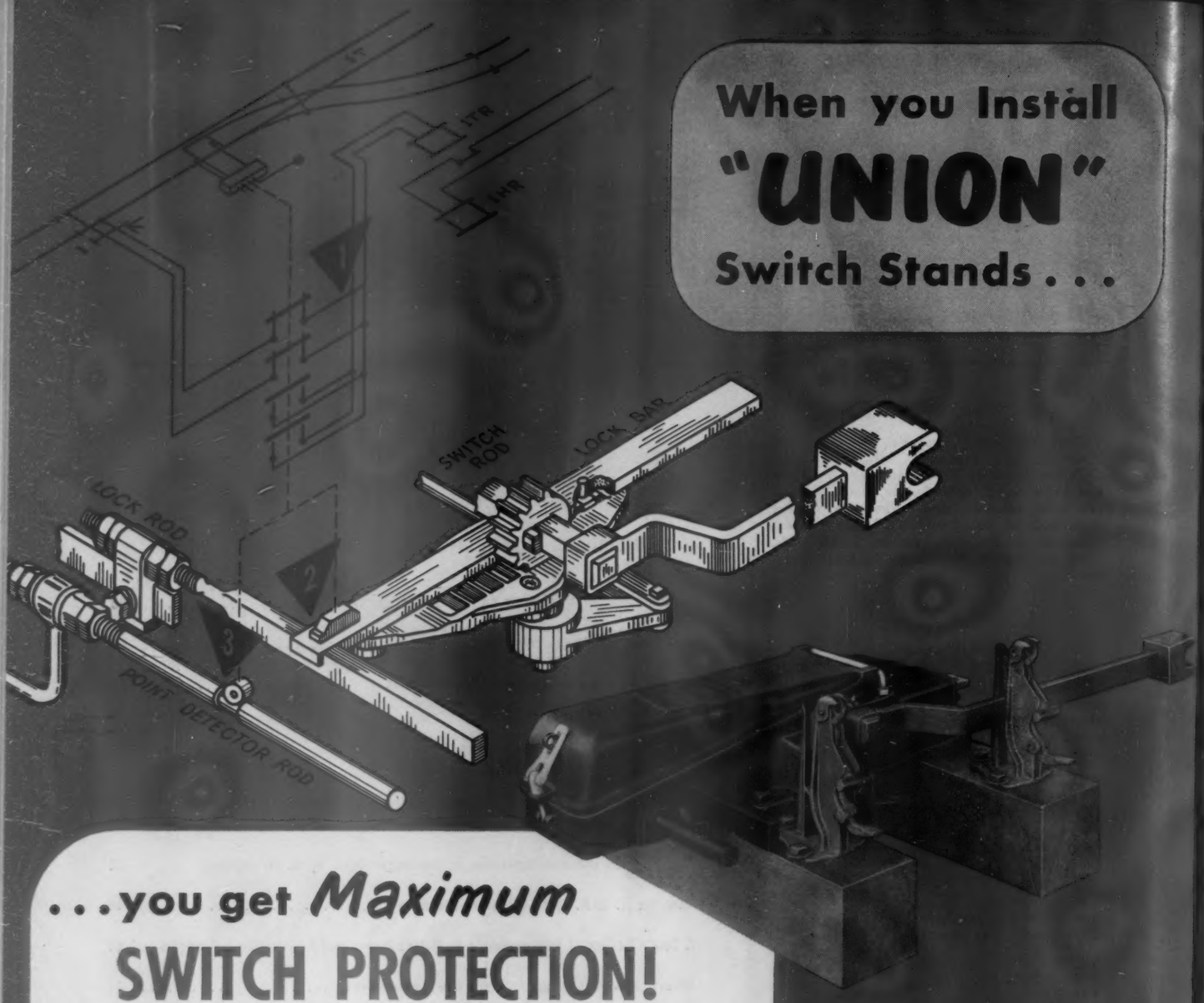
# When you Install "UNION" Switch Stands . . .




## . . . you get *Maximum* SWITCH PROTECTION!

When you specify "Union" T-20 or T-21* Switch Stands, you get more than merely devices for throwing switches. Consider these special features:

1. A *built-in* circuit controller to prevent signals from clearing, unless . . .
2. The mechanism is in the normal locked position, with the lock bar engaged in the lock rod notch, and . . .
3. The switch points are properly positioned, as continuously checked by the point detector rod.

Ask our nearest district office for full details.

*"Union" T-20 and T-21 Switch Stands are the same, except that the T-21 has a built-in target drive assembly.

"Union" T-20 Switch Stand with *built-in* circuit controller and normal point detector.

**UNION SWITCH & SIGNAL COMPANY**

SWISSVALE . PENNSYLVANIA

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# WEEK AT A GLANCE

**MORE ENLIGHTENMENT NEEDED:** The American people will not learn the facts of the serious railroad labor situation until it has had a lot of public discussion—like, for example, Daniel Loomis' recent talk to a shippers' board at Colorado Springs. Our leading editorial (page 55) is another comment on this labor situation—leading to the conclusion that more speeches like Mr. Loomis' are needed if the problem is to be realistically tackled—and solved.

---

**IMPROVEMENT—SYSTEM-WIDE:** Continuing its extensive post-war improvement program, the Atlantic Coast Line is now engaged in work on some of its more important freight yards. What the road is doing, particularly at Tampa and Waycross (where work has been completed), at Florence (work under way), and at South Rocky Mount (work beginning), is described and illustrated in the article which starts on page 79.

---

**IN NEXT WEEK'S ISSUE:** The July 2 *Railway Age* will be a Freight Traffic issue. One article will deal with freight-car floor damage and what to do about it. In another Vice-President Carpi of the Pennsylvania will analyze some of the difficulties in the way of tariff simplification. In a third an experienced shipper will outline a 12-point program for better l.c.l. service. Others will deal with new facilities and loss and damage reduction. And there'll be some other changes, too—outlined in more detail in the editorial on page 57.

---

**FOR MAXIMUM ECONOMIES:** The diesel locomotive should be used not merely as a substitute form of motive power, but as a completely new tool, which can bring the industry not only substantial direct economies but important collateral savings as well. So Electro-Motive's N. C. Dezendorf told the New York Society of Security Analysts on June 1, in a paper which is reprinted, in condensed form, in this issue (page 58). Among other things, Mr. Dezendorf went into considerable detail as to what his company is doing to help the railroads achieve maximum economies from dieselization.

---

**RED HERRING:** Those representatives of other transportation agencies (and shippers) who find it so easy to tell the railroads to "get more efficient" (see news account of U. S. Chamber of Commerce transportation poll) might ponder the figures on locomotive orders just released by the A.A.R., also reported in the news columns. As of June 1, the association says, Class I railroads had on order the largest number of locomotive units ever recorded. Nearly all diesel, of course. Doesn't that indicate that the railroads are going to the full extent of their limited financial resources (and scanty material allocations) to achieve maximum efficiency—and economy too? They could, of course, do much more, and do it faster, if they were given fairer treatment, i. e., necessary rate adjustments and true competitive equality. But blaming railroad difficulties on the railroads' alleged "lack of efficiency" is a mighty convenient red herring for those who don't really want efficient railroads—certain truck operators, for example. Just to underline rail efforts to increase their own efficiency, the already record total of locomotives on order June 1 was boosted last week alone by another 167 units—78 for the Milwaukee, 44 for the B. & O., 23 for the N. P., 20 for the T. & P. (to make it soon all diesel), and two for the L. & H. R. (See Equipment News.)

---

**EFFICIENCY AND SERVICE:** Those same competitors (and shippers) who think greater "efficiency" is a panacea for all railroad problems might be interested in reading the account of the annual meeting of the American Association of Railroad Superintendents—which is all too briefly summarized, starting on page 82. Improved efficiency of the railroads themselves, and better service to shippers, were the keynote themes of the busy sessions and of the various committee reports as the superintendents ranged over a wide variety of topics, from yard operation to employee selection and training.

---

**WHAT'S NEW?** The answer seems to be—lots of things! Provided, that is, you are a railroad mechanical officer interested in new or improved products for use in connection with operation or maintenance of railroad motive power or rolling stock. A large number of these products—some previously announced and some brand new—are described, and many of them illustrated as well, between pages 67 and 78. And, speaking of new products, don't overlook Electro-Motive's new 340-hp. diesel switcher. It's illustrated in the news pages, along with the account of ceremonies attending delivery to the Wabash of E.-M.D.'s 10,000th diesel unit.

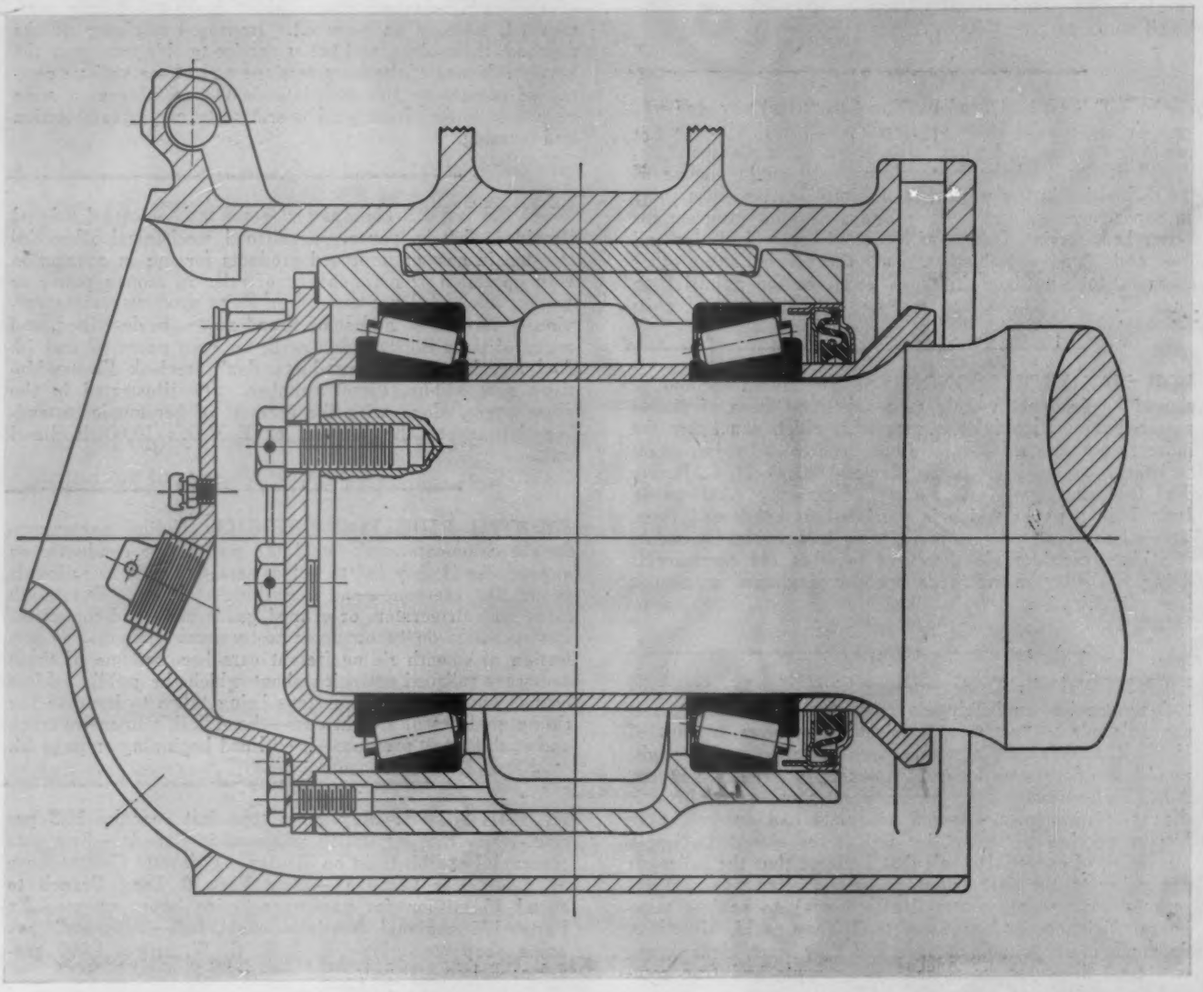
---

**SMOOTH RIDE FOR FREIGHT:** Unlike passengers, freight shipments can't scold the porter, the conductor or anyone else if they fail to get as smooth a ride as railroads would like everyone—and everything—to have. But rough rides for refrigerators or canned goods can—and sometimes unfortunately do—show up in costly damage claims. So perfection of smooth riding freight cars becomes one of those necessary railroad activities about which the public seldom hears. One of the major steps being taken to improve the riding qualities of freight cars—the A.A.R.'s intensive truck and snubber test program—is outlined beginning on page 64.

---

**IN THE NEWS:** May gross tops last year by 16.3 per cent.—New rate legislation proposed in Canada.—Erie puts centennial exhibit train on display.—Lafayette College buys St. Louis Car Company.—New York & Long Branch to spend $5 million for passenger-service improvements.—Ex Parte 175 regional hearings concluded.—"Non-ops" ask union shop mediation.—D. & R. G. W. orders 1,000 gondolas; Frisco 100 pulpwood cars.

# ANNOUNCING! FOR STRAIGHT AND INTEGRAL



# TIMKEN® BEARINGS AXLE JOURNALS BOX SIDE FRAMES

THE drawing at left shows the first straight journal roller bearing application for freight cars that does not require a major modification of standard integral friction bearing boxes. It is another development of The Timken Roller Bearing Company—pioneers in the design of roller bearings for the railroads.

The straight journal for this new freight car application is easy to machine and can be readily converted from plain bearing axles. An improved design of wedge takes thrust in both directions. And because both Timken® roller bearings are the same size, inventory requirements are minimized.

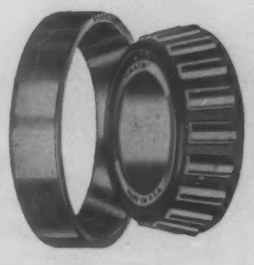
In addition, this new application will give you the same advantages of Timken tapered roller bearings that have been proven in other railroad designs in over 25 years.

Because Timken bearings are tapered in design they take both radial and thrust loads. Lading damage claims are reduced because Timken bearings cut starting resistance 88%, permit smoother starts and stops. "Hot box" delays are practically eliminated. 90% fewer man-hours are needed for terminal inspection. There's less wear and tear on draft gear and other parts. For additional information about this new Timken roller bearing application, write The Timken Roller Bearing Company, Canton 6, Ohio. Canadian plant: St. Thomas, Ontario. Cable address: "TIMROSCO".

**TIMKEN**

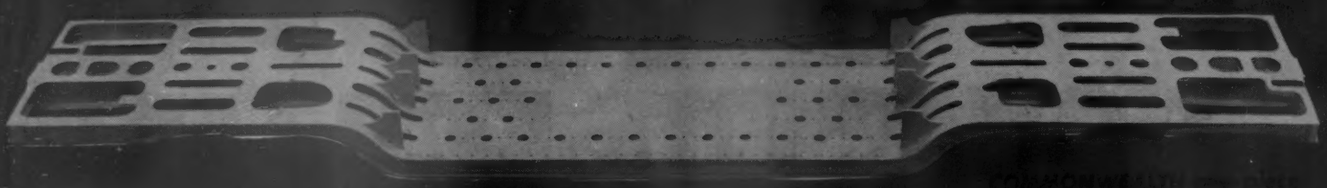
TRADE-MARK REG. U. S. PAT. OFF.

***TAPERED ROLLER BEARINGS***



NOT JUST A BALL ○ NOT JUST A ROLLER ▭ THE TIMKEN TAPERED ROLLER ▭ BEARING TAKES RADIAL ◫ AND THRUST ◫ LOADS OR ANY COMBINATION ✳

# More and More



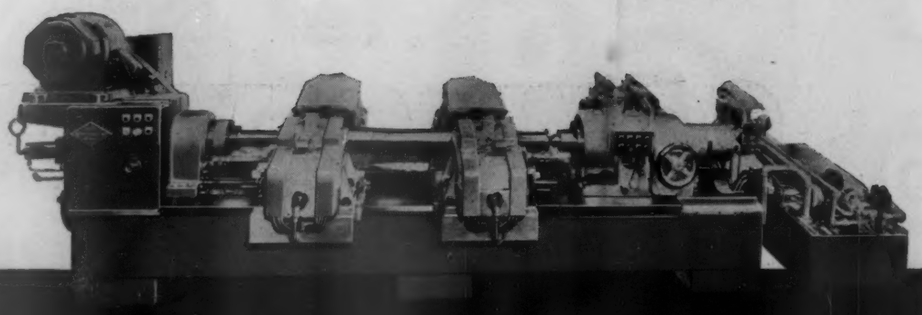
# COMMONWEALTH
## CAST STEEL UNDERFRAMES AND TRUCKS
## *Are Transporting Heavy Loads*

COMMONWEALTH one-piece cast steel underframes and 6-wheel trucks of proven design are being used on more and more heavy duty freight cars, assuring high availability and low maintenance expense.

These underframes combine the important elements of great strength with minimum weight, extreme durability and simplicity. For flat cars, depressed center cars and pulpwood cars, the one-piece design makes possible a lower car height from rail to loading floor, permitting easier loading and higher loads. It also provides a uniform surface for floor application.

COMMONWEALTH 6-wheel equalized trucks for high capacity freight cars provide positive equalization and adequate spring capacity which are essential to efficient, safe, economical operation. The rugged one-piece truck frames with machined integral pedestals assure true alignment of wheels and axles.

For higher availability and true upkeep economy in flat cars, depressed center cars, pulpwood cars, sulphur-carrying cars, ore cars, well cars and others — build them with COMMONWEALTH one-piece underframes and trucks.

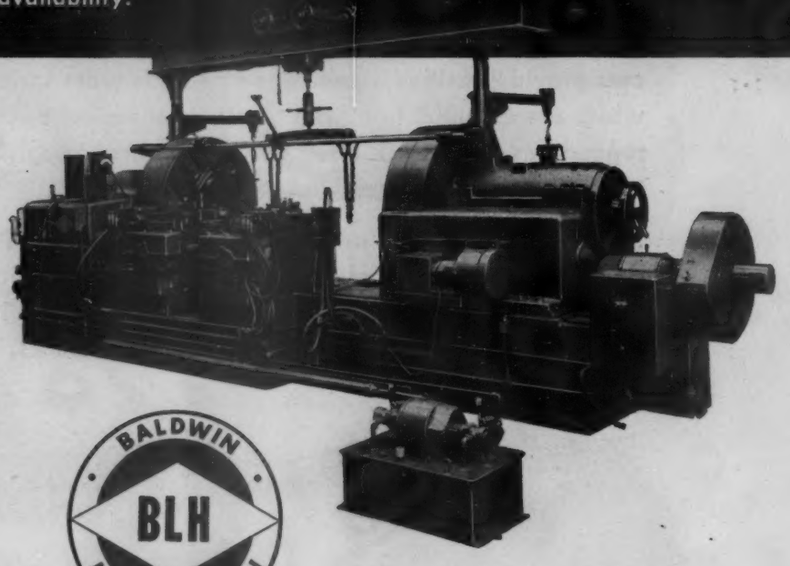


**NILES Axle Burnishing Lathe.** Independently or simultaneously burnishes journals and fillets of new or refinished axles. Users report 50% higher production than on conventional machines.

# a BIGGER JOB AHEAD means a BIGGER JOB AHEAD

## Be ready with these NILES

Getting bad-order cars and shopped locomotives back in service *quicker* produces the same result as buying new rolling stock—and it's a whole lot cheaper! Just check the records on these modern Niles railroad shop tools . . . you'll see how they are paying off for users in increased rolling stock availability.



**NILES Car Wheel Lathe.** One shop says, "Wheel re-turning time halved by this new machine." Designed to take pressure of carbide-tipped tools. Roughing cut is finish cut. Profiling attachment permits further saving in time per set.

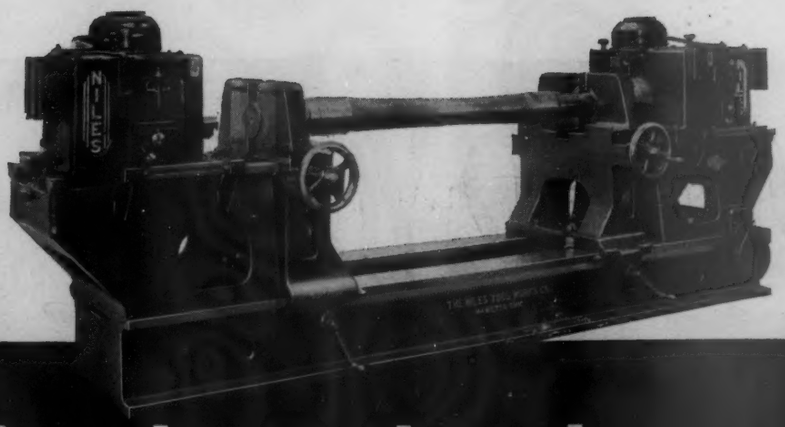
**A representative will be glad to tell you how Niles railroad shop tools can help you keep your shop production ahead of today's expanding needs. Write, wire or phone.**

**LIMA-HAMILTON DIVISION**
**Hamilton, Ohio**

BALDWIN · BLH · LIMA-HAMILTON

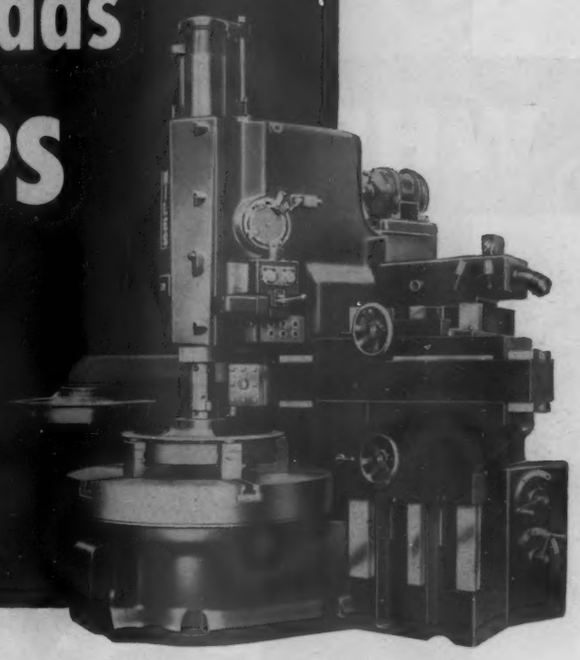
**BALDWIN-**

**GENERAL OFFICES: PHILADELPHIA 42, PA.**

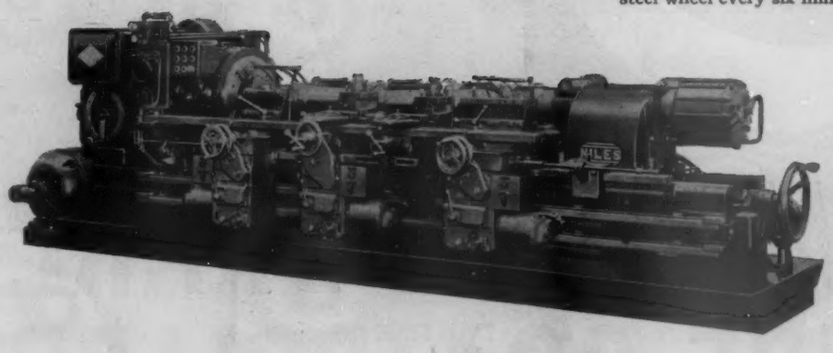


**NILES Hydraulic Centering Machine.** Centers new axles or renews centers on mounted or unmounted axles prior to turning. Permits easy checking of individual and related concentricity. Action is automatic. Assures high production and uniform dimensional results.

# for the Railroads
# for the SHOPS
# TOOLS



**NILES Hydraulic Diesel Wheel Borer.** Speeds and feeds designed for carbide tools. Push button chucking and unchucking, automatic boring cycle. User reports: "Cast wheel every four minutes—steel wheel every six minutes."



**NILES End Drive Axle Lathe.** Developed after extensive research, to speed up this key operation. Machines axles over their entire length in ¼ to ½ the time ordinarily required. Leaves no indentation from driving jaws.

## LIMA-HAMILTON

OFFICES IN PRINCIPAL CITIES

GUARD YOUR
DIESELS AGAINST...
WHEEL SPIN ... WHEEL
....with the NEW
3 IN 1
AMERICAN BRAKE
SHOE CONTROLLER

The American Brake Shoe Controller gives 3 in 1 protection for diesel locomotives because it:

1. Detects and corrects spin promptly at all speeds.
2. Detects and corrects sliding during braking.
3. Detects and warns if wheel becomes locked.

The American Brake Shoe Controller is not new. Proven through years of service on high-speed passenger car and locomotive equipment, it is now adapted to give 3 in 1 wheel protection on diesel locomotives. American Brake Shoe Company, 230 Park Avenue, New York 17, N. Y.

AMERICAN Brake Shoe COMPANY

BRAKE SHOE AND CASTINGS DIVISION

# MODEL 51 NEW CENTURY

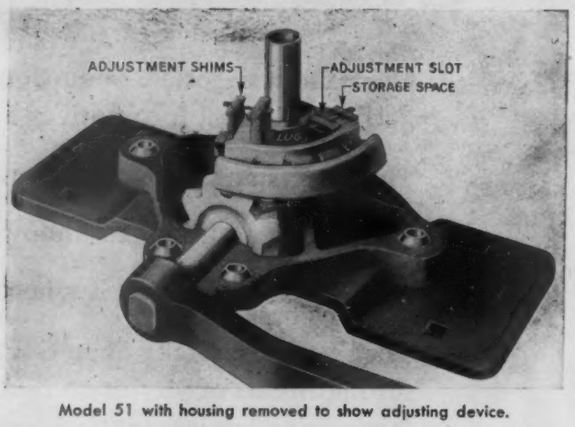
## The stand that takes the nuisance out of switch-point adjustment

One of the best-liked features of our Model 51 New Century stand is the way it facilitates switch-point adjustment. The 51 has a simple adjusting device within the stand itself—a device that can be reached merely by pushing aside an outer cover. Then the operator has only to loosen two nuts and add or remove shims furnished with the stand; this increases or decreases the throw of the switch points.

Easy! Quick and effective, too. And far more convenient than ordinary methods of adjustment.

This feature is optional, and is included only on the Model 51. For railroads preferring a nonadjustable stand, Bethlehem furnishes another type—the Model 50. Both are available in low and intermediate designs. Both have the same smooth action, the same sturdy gearing, the same parallel throw.

Whichever you choose, you'll have a stand that's unsurpassed in heavy-duty service. Use it with big rail, 60-lb and up—in main lines, branch lines, yards.




Model 51 with housing removed to show adjusting device.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. *Export Distributor:* Bethlehem Steel Export Corporation

★ BETHLEHEM STEEL ★

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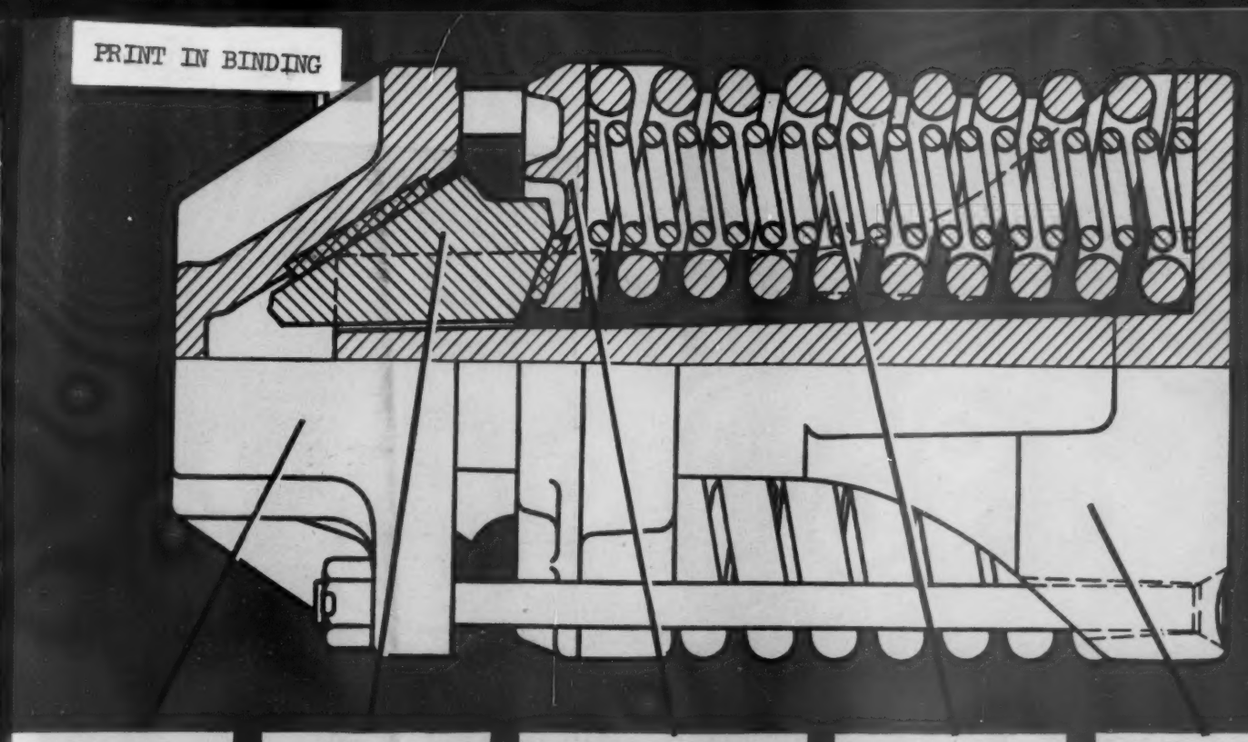
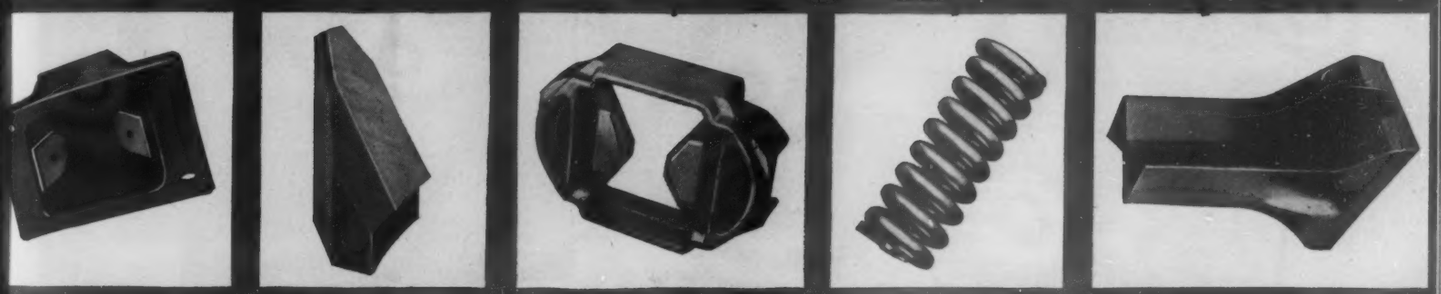




# Why the National M-17-A is outstanding!

## ...Report No. 950 on AAR Five and Twelve Year Tests

● Our Report No. 950 (taken from Circular No. DV-1215, nnual Report of the AAR Committee on Couplers and Draft ears) gives in detail some of the success of the National -17-A Friction Draft Gear. A brief summary of the AAR Com-ttee's conclusions shows how this gear gives outstanding rformance in providing maximum car protection.

The report points out that in both the five and twelve ar tests "externally these gears appeared in good shape... ternally there was no detectable wear... the wedging rfaces were all nicely polished... friction surfaces all had nearly 100% contact and all surfaces were fairly straight."

And the report shows that after twelve years of service, the average capacity of the gears tested was still 37% above the AAR minimum of 18,000 foot-pounds required of new gears.

The National M-17-A gear stood up well on these tests because of its rugged design of inwardly acting wedge pressure against a centrally located friction member. Alloy steel castings with machined, ground and hardened friction surfaces assure accurate fit and long wear life.

A-3938

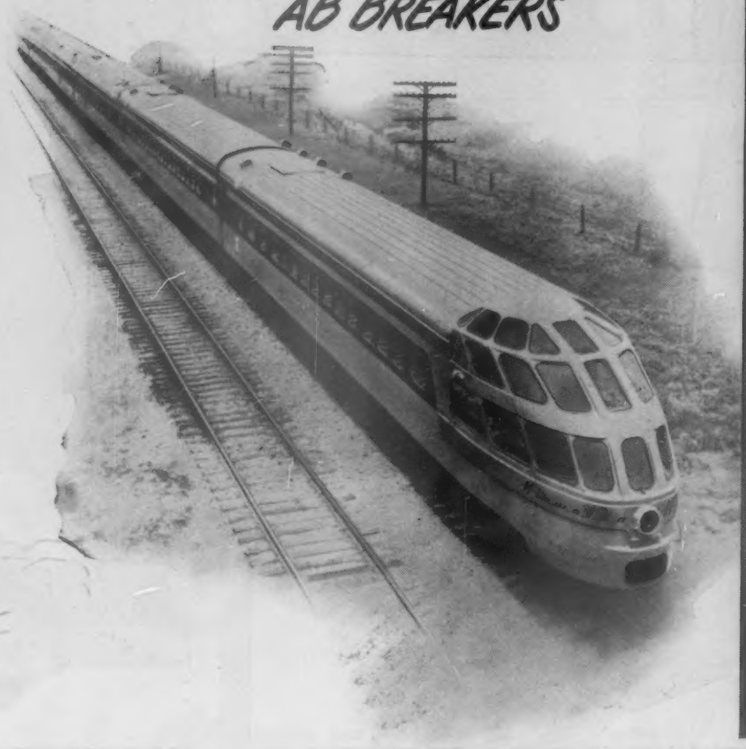
*Write today for your copy of Report Number 950 on AAR e and twelve year tests:* **National Malleable & Steel Castings Company, 600 Quincy Avenue, Cleveland 6, Ohio.**

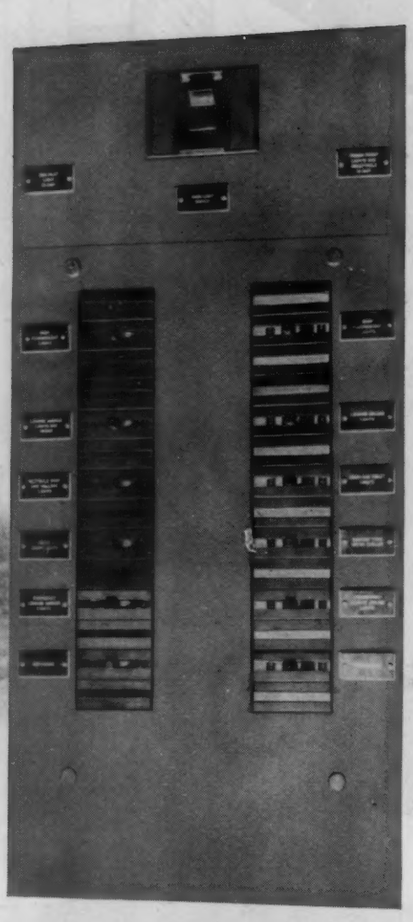
NATIONAL Products

**NATIONAL MALLEABLE and STEEL CASTINGS COMPANY**

COUPLERS ● TRUCKS ● YOKES ● DRAFT GEARS ● JOURNAL BOXES AND LIDS

*Save with SAFER... SURER AB BREAKERS*





# Only circuit breakers do BOTH JOBS

**1 PROTECT CIRCUITS**

**2 ASSURE MAXIMUM PASSENGER SERVICE**

Increased passenger load today means increased electrical load, for two reasons. First, a greater diversity of equipment for modern electrical living on trains. Second, more burden on each type of equipment.

To protect circuits and equipment, Westinghouse Circuit Breakers trip on dangerous overloads and shorts, yet carry temporary, harmless overloads in their stride—no annoying, needless outages to disrupt service. When faults do occur on the circuit, a flip of the breaker handle restores power after the trouble has been cleared. Not even humping and bumping of freights will disturb the precise calibration of Westinghouse Breakers.

Get positive, proved protection the only safe, sure way—with circuit breakers. Be sure—specify Westinghouse.

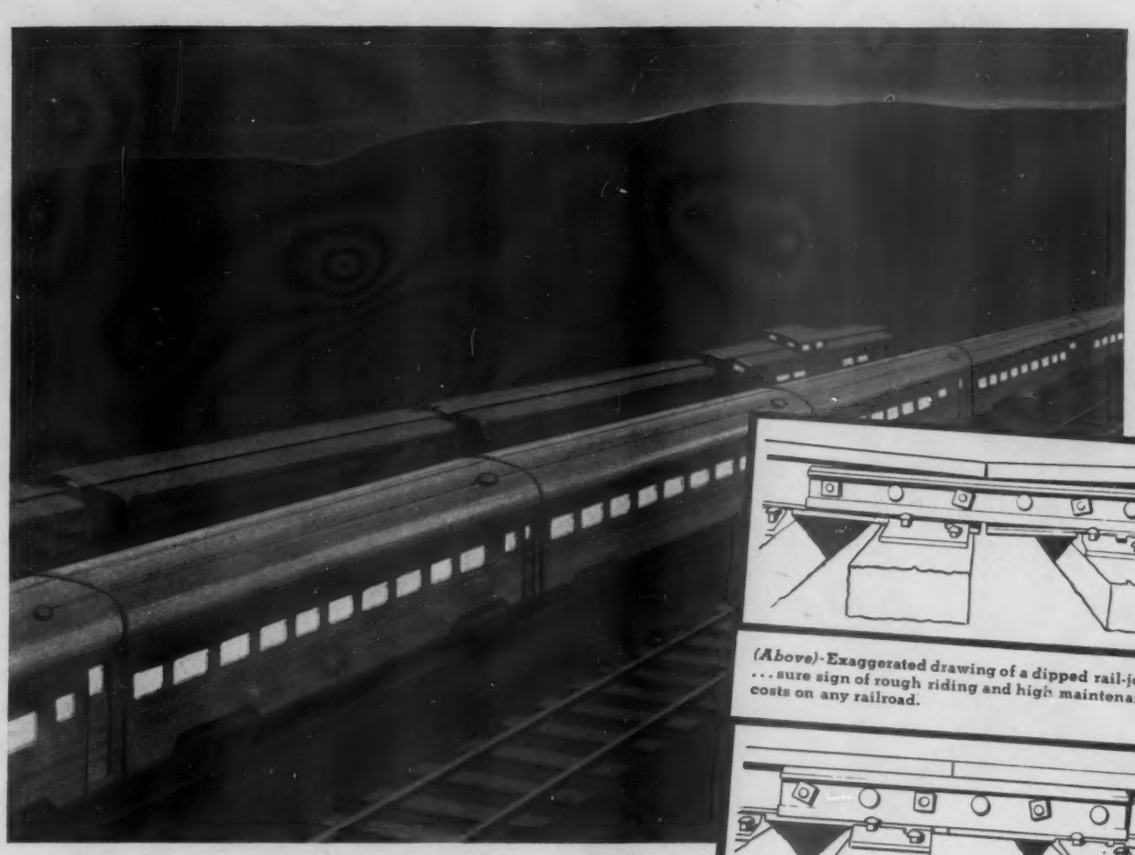
Call your nearest Westinghouse office for full data, or write for bulletin B-4081, Westinghouse Electric Corp., P. O. Box 868, Pittsburgh 30, Pa. J-30066

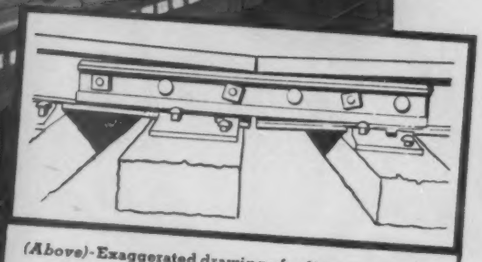
DESIGN TESTED AND VERIFIED IN THE Westinghouse HIGH POWER LABORATORY

YOU CAN BE SURE.. IF IT'S Westinghouse

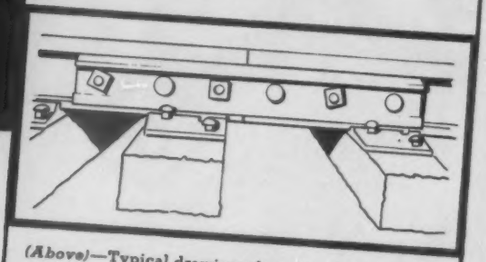
AB CIRCUIT BREAKERS

THE COMPLETE LINE





*(Above)*-Exaggerated drawing of a dipped rail-joint . . . sure sign of rough riding and high maintenance costs on any railroad.



*(Above)*—Typical drawing of a rail-joint brought to exact level *to stay* with the individually operated tamping arms of the Matisa Tamper.

*(Below)*—Tamping shoes of Matisa Tampers *do not* pound ballast to powder—vibratory pressure action compacts ballast *under ties*, as well as at sides.

# SMOOTH RUNNING ON *Matisa*-TAMPED JOINTS

LEVEL track and smooth joints speed schedules, save track and equipment maintenance, make passengers rail travel boosters . . . And this is the track you get with Matisa precision tamping . . . The only power tamper available that compacts while vibrating *under ties* for level joints and rails that *stay level.*

Write to our M. W. Engineering Department for full details.

**THE MATISA EQUIPMENT CORP.**
**224 South Michigan Blvd. • Chicago 4, Illinois**

ALL OVER THE WORLD
*Matisa* TRACK MAINTENANCE SPECIALISTS

# Winning Tonnage Back to the Rails *WITH "ROCKET FREIGHTS"*

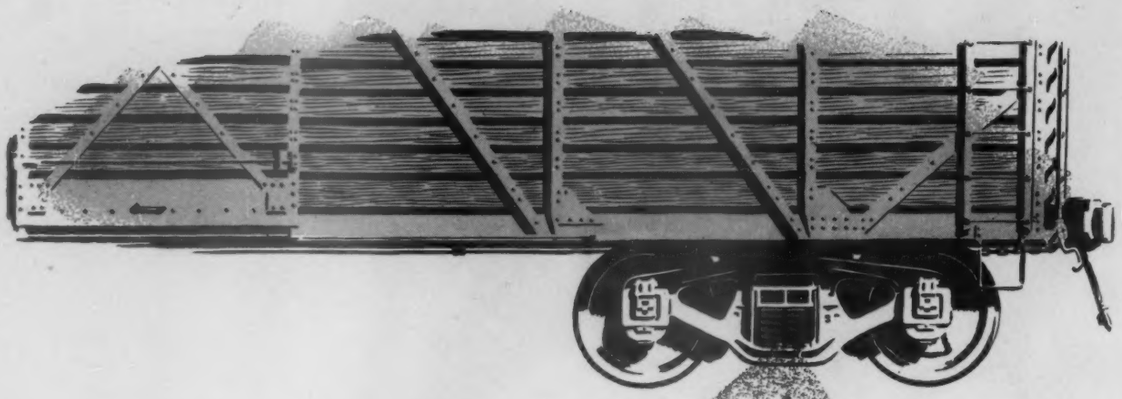
Mainline freight shipments, from the Twin Cities to Texas and from Chicago to the West, go "Rocket Freight." This expedited service is the Rock Island's strong bid for freight in a highly competitive field.

Since the dieselization of Rock Island freight service, freight train tonnages have steadily increased until they are now eighteen per cent above the peak war year of 1944—and that accomplished with 30 per cent fewer locomotives. Powerful Alco-GE locomotives have substantially contributed to the outstanding success of the competitive service provided by "Rocket Freights."

**AMERICAN LOCOMOTIVE and GENERAL ELECTRIC**

113-262

160
160
Rock
Island
ISLAND
RF



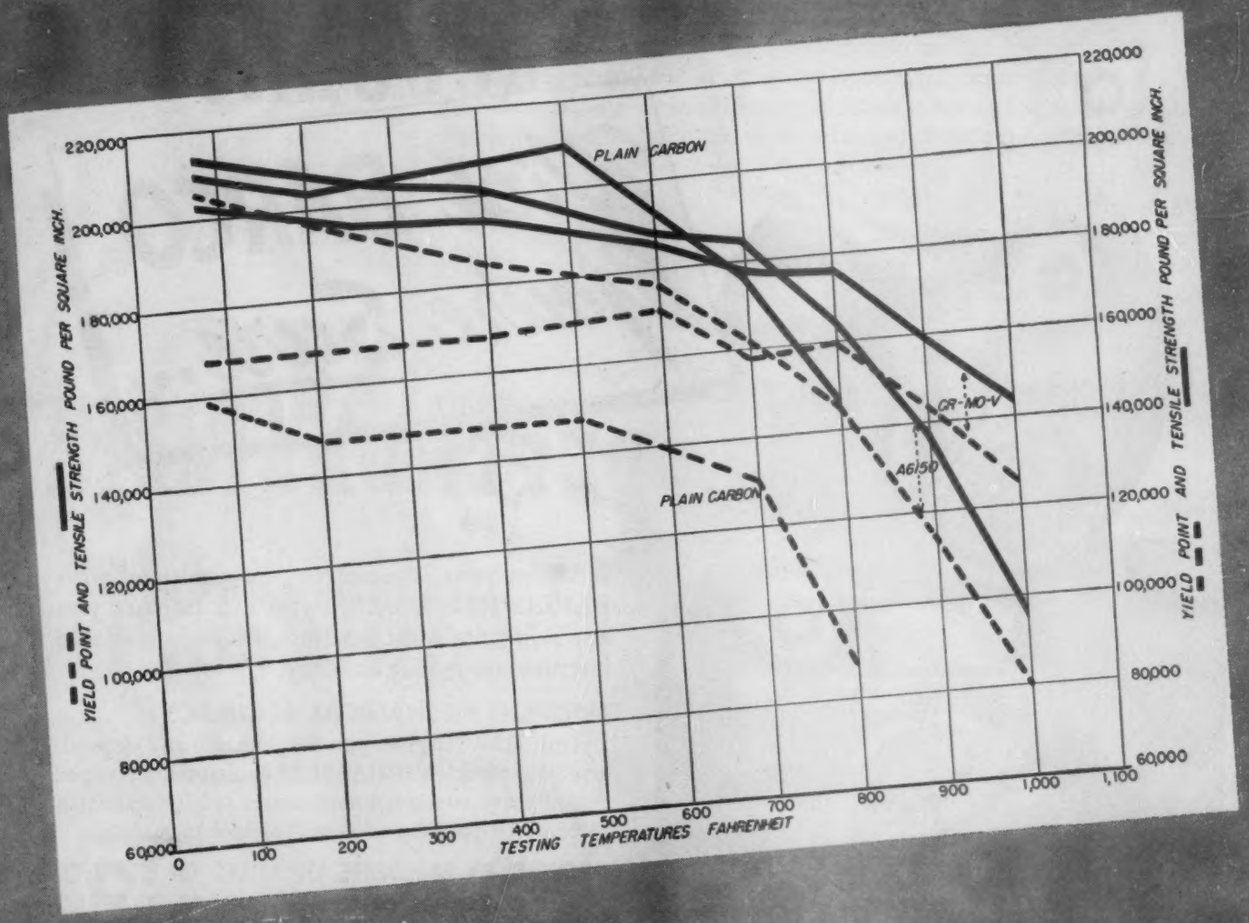
# Start here...

## to earn a faster return from fast freight

Long travel springs *increase* your freight revenue
by *decreasing* your damage claims. Made by the Railway Steel-Spring
Division these heavy coil springs cushion jars, soften
jounces, and assure a smooth ride that protects the pay-load
in your car from damage. *"Railway" springs* also
stretch your operating dollar by lowering maintenance costs and
increasing the life of your rolling stock and roadbed.
To receive all of these benefits, specify *"Railway" springs.*
You will receive fast efficient service plus a
product that's backed by many years of pioneering in spring design.
Call your Alco sales representative in New York, Cleveland,
Chicago, St. Louis, St. Paul, San Francisco.

**Railway Steel-Spring Division**

**AMERICAN LOCOMOTIVE COMPANY**




# HIGH TEMPERATURE PROPERTIES

## *of Cr-V and Cr-Mo-V Spring Steels*

SPRINGS FOR SERVICE at elevated temperatures require steels which resist softening and lowering of the yield point. Unless hardness and yield strength are stabilized by correct alloy additions to the steel, these properties deteriorate rapidly as the temperature is raised.

The chart above shows the yield point and tensile strength of three types of spring steel at elevated temperatures determined by standard short-time tension tests.

Springs of plain carbon steel are sometimes used at moderately elevated temperatures, although their lower yield values prevent them from giving service as satisfactory as that of the alloy spring steels.

Chromium-vanadium steel springs, such as AISI 6150, give better service at ordinary temperatures because of the higher yield point. In addition, they may be used at operating temperatures up to about 700° or 750° F because they retain high yield point values as the temperature is increased.

Chromium-molybdenum-vanadium steel was especially designed for springs operating at temperatures in excess of 750° F. It can be used for springs operating at temperatures as high as 850° F or even higher under some conditions. At 800° F, the yield point of this steel is still greater than that of plain carbon steel at room temperature.

If you have a problem in spring applications at elevated temperatures, our metallurgical engineers will be glad to help you solve it.

MAKERS OF ALLOYS — VANCORAM BRAND — CHEMICALS AND METALS

## VANADIUM CORPORATION OF AMERICA

420 LEXINGTON AVENUE, NEW YORK 17, N. Y. • DETROIT • CHICAGO • CLEVELAND •

# ACCURACY

## With BARCO You're Sure...

# DEPENDABILITY

● When your locomotives are equipped with BARCO RECORDERS, you can be sure you are using the most accurate, most dependable instruments money can buy.

**INHERENT MECHANICAL ACCURACY**

Only BARCO gives you the accuracy and dependability of ALL-MECHANICAL construction. A tested and proven design, manufactured to high standards of precision. Easy to install; simple to maintain.

**PROVED BY MILLIONS OF MILES OF SERVICE**

The accuracy and dependability of BARCO SPEED RECORDERS are unquestioned. A typical user* reports accuracy within 2% at 100 MPH after a million miles of service!

**RECORDERS FOR EVERY TYPE OF LOCOMOTIVE**

The BARCO line is complete! Records of every locomotive operation—for every type of engine in service or now being built. For information, see our local Barco representative or write to BARCO MANUFACTURING CO., 1800-G Winnemac Ave., Chicago 40, Illinois.

** Name on request.*

*Ask for a Copy* ➧

**NEW BULLETIN**—"Barco Recorders for Diesel, Steam, and Electric Locomotives in Passenger, Freight, and Switching Service."

# BARCO RECORDERS

- SPEED RECORDERS
- SPEED INDICATORS
- DIESELOMETERS
- SWITCH ENGINE RECORDERS

*FREE ENTERPRISE*—THE CORNERSTONE OF AMERICAN PROSPERITY

**"Conservation" and "Mobilization"** demand a lot of thought and action these days. And railroads are right in the middle. They see gathering, saving and allocating in most every industry they serve. They follow those same practices themselves. Moving freight tonnage at the lowest possible cost-per-mile takes in many factors of conservation. One of the most important is *power*.

# Conservation on the rails

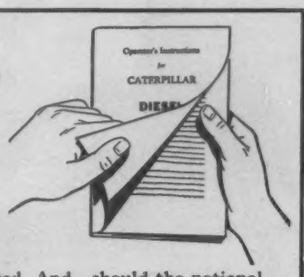
The 44-ton Diesel locomotive has come through with some telling blows at power wastes. It's the happy answer to the problem of handling small strings of varying loads over short hauls—*economically*. It's the "Handy Andy" of the yard too—where switching calls for maneuverability and instant action. No wasting of horsepower—the locomotive fits the loads. And practically no down-time whatsoever when "Caterpillar" Diesels provide the power!

The record of "Caterpillar" Railroad Diesels is an epic of dependability and long life in transportation power units. It makes it understandable why more than 90% of all the 44-tonners on Class I, II and III railroads in the Western Hemisphere are "Caterpillar" powered.

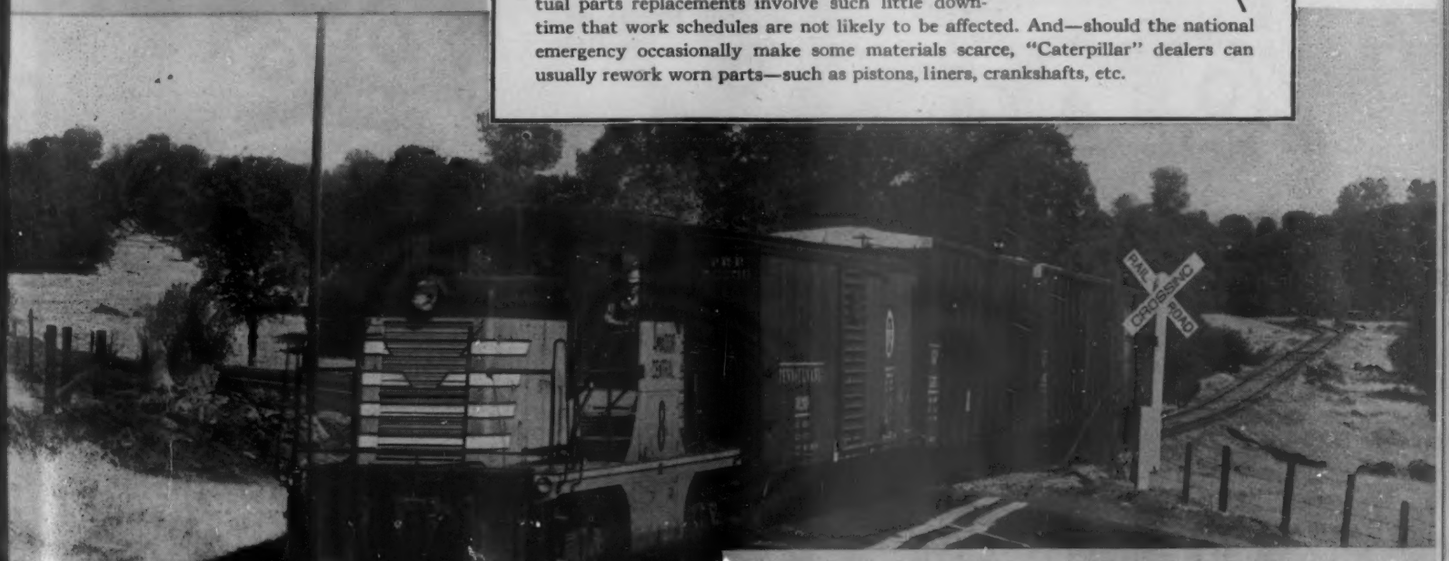
**CATERPILLAR**, PEORIA, ILLINOIS

*The Amador Central (Calif.) finds this "Caterpillar" powered 44-tonner the ideal locomotive for handling up to 225 tons of lumber, clay, brick, machinery, gas, oil, etc., along its 12 miles of line having 2% to 4½% grades and curves up to 27%. "Doing a very fine job," says spokesman R. J. Ball.*

## *You're the Doctor*




Preventive maintenance is good medicine. "Caterpillar" Diesel servicing and maintenance are so simple that availability is virtually 100% for indefinitely long stretches of daily use. Even eventual parts replacements involve such little down-time that work schedules are not likely to be affected. And—should the national emergency occasionally make some materials scarce, "Caterpillar" dealers can usually rework worn parts—such as pistons, liners, crankshafts, etc.




# CATERPILLAR

REG. U. S. PAT. OFF.

## RAILROAD DIESELS

# NOW AT LAST, A "Damage

One of the 400, 50-ton GAEX-DF Box Cars equipped with "Damage Free" devices, now in regular service. Built by the General American Transportation Company, Chicago. These quality box cars are for lease by the railroads.

**U·S·S COR-TEN** is used to add strength and durability to floor and side sheets

# Free" BOX CAR!

## Built to assure the utmost protection both to lading and car structure

HERE is a shipper's dream come true. A "quality" box car that can be loaded to full capacity, that will eliminate dunnage, keep damage claims and car repair costs to a minimum—and still can be operated at a profit.

When they decided to build a box car that could actually carry lading without damage, General American took on quite a job.

For, in addition to developing a car that would minimize damage to shipments, they also undertook to produce a design that, by assuring capacity loading, high monthly mileage and low maintenance cost, would return the shipper sufficiently increased net earnings to more than cover a 50% higher first cost.

To do this they entirely reversed the recent tendency to cut car cost by stripping a car to its barest essentials. Instead, in the GAEX design they not only strengthened the structure throughout, well above the average, but they incorporated a number of advanced features already well known but never before combined in a single car. These features make loading and unloading easier and faster, make capacity loading possible, permit higher, safe switching speeds and assure maximum protection to the lading. In addition, they make the car itself so rugged and durable, that maintenance is certain to be very low.

The car floor, for example, is not made of plain steel but of U·S·S COR-TEN to give the floor maximum strength and greater resistance to wear. In the car side sheets, too, COR-TEN is used to provide extra strength and toughness plus superior corrosion resistance so that maintenance costs will be minimized.

U·S·S COR-TEN was a natural choice for these applications because in over 120,000 freight cars it has thoroughly demonstrated its ability to reduce upkeep costs and to prolong life by retarding corrosion and imparting greater ruggedness and durability wherever used.

AMERICAN STEEL & WIRE COMPANY, CLEVELAND  COLUMBIA STEEL COMPANY, SAN FRANCISCO
NATIONAL TUBE COMPANY, PITTSBURGH • TENNESSEE COAL, IRON & RAILROAD COMPANY, BIRMINGHAM • UNITED STATES STEEL COMPANY, PITTSBURGH
UNITED STATES STEEL SUPPLY COMPANY, WAREHOUSE DISTRIBUTORS, COAST-TO-COAST • UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS

**U·S·S HIGH STRENGTH STEELS**

UNITED STATES STEEL

IN RAILROADING

# you'll see this

**SKF** Axle journal boxes have been applied to over 30,000 passenger cars, 52,800 freight cars. Over 11,300 steam, diesel and electric locomotives.

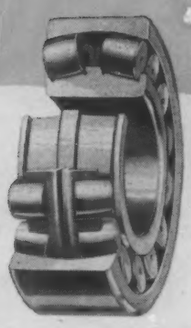
# trade mark

ON MORE JOURNAL BOXES IN SERVICE ON PASSENGER CARS, FREIGHT CARS AND LOCOMOTIVES

THAN ANY OTHER TRADE MARK IN THE WORLD...

This reliance on **SKF** by an industry whose standards for reliability are so high is typical of **SKF**'s acceptance by *all* industry.

7250



8 REASONS WHY **SKF** IS PREFERRED BY ALL INDUSTRY

integrity
craftsmanship
metallurgy
tolerance control
surface finish
product uniformity
engineering service
field service

**SKF**
**JOURNAL BOXES**

**SKF INDUSTRIES, INC.,** PHILADELPHIA 32, PA.
*—manufacturers of* **SKF** *and* HESS-BRIGHT *bearings.*




*For additional information, use postcard on pages 119, 120*

# The pioneer in the field . . .

## the new 1951

# HOLD-RITE Packing Retainer

● 15 years of experience in fabricating Hold-Rite Packing Retainers and the field-testing of more than 6,500,000 of these quality retainers since 1938 through actual service on cars have given Spring Packing Corporation the "know-how" necessary to enable American railroads not only to reduce hot box losses, but make important reductions in maintenance costs required to keep cars rolling.

Only with Hold-Rite Packing Retainers are you assured of the right combination of correct styling, controlled quality manufacturing procedure, variety of sizes and proper field service that means successful, trouble-free, economical retainer installations. For full information about the new 1951 Hold-Rite Packing Retainer illustrated here write, today!

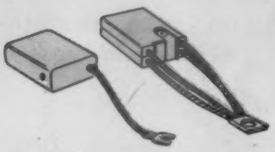
*For 31 Years* *the Standard*

**SPRING PACKING CORPORATION** 332 SOUTH MICHIGAN AVE. CHICAGO 4, ILLINOIS

**OTHER SPRING PACKING PRODUCTS**

Spring Packing

Chrome Lock Gasketing

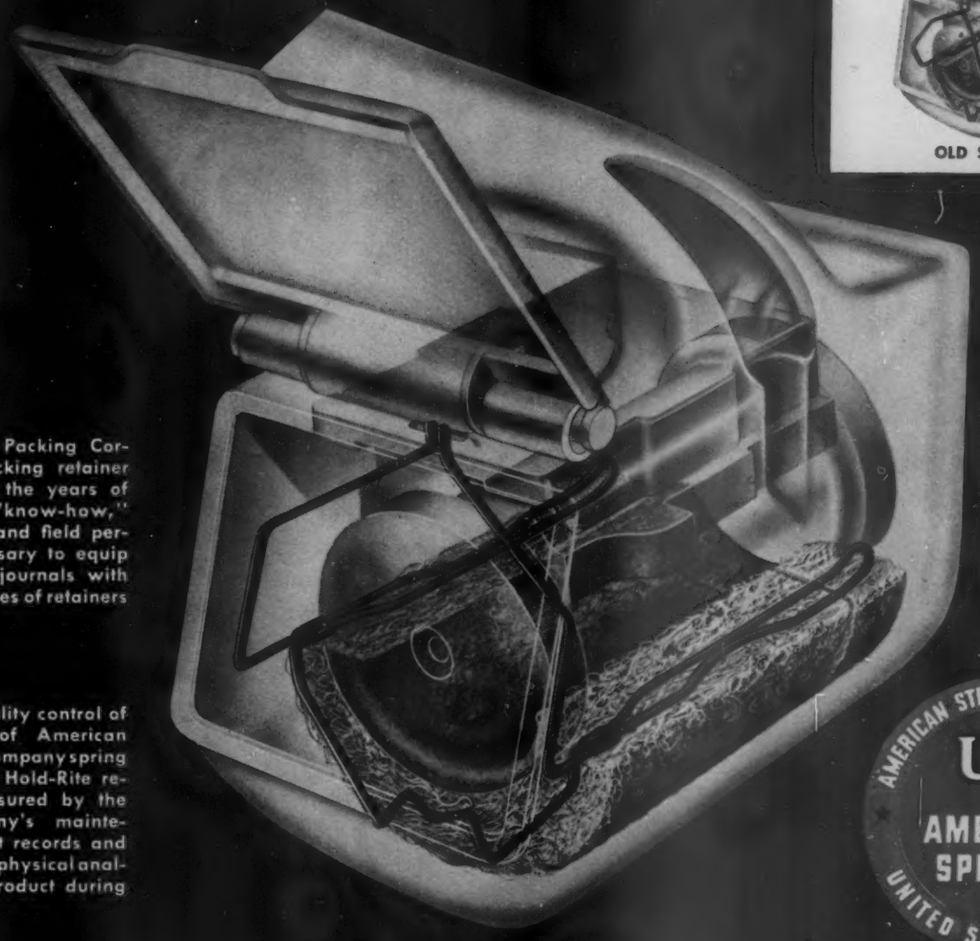


Pittsburgh Carbon Brushes

King Automatic Brake Slack Adjuster

# up-to-date as a streamliner!

OLD STYLE



Only Spring Packing Corporation, packing retainer pioneer, has the years of experience, "know-how," style, sizes, and field personnel necessary to equip all types of journals with the proper types of retainers for the job.

Complete quality control of every inch of American Steel & Wire Company spring steel used in Hold-Rite retainers is assured by the steel company's maintenance of heat records and chemical and physical analysis of the product during fabrication.

AMERICAN STEEL & WIRE COMPANY
USS
AMERICAN SPRINGS
UNITED STATES STEEL

Used in this product

## NO OTHER RETAINER HAS ALL THESE FEATURES

- New design permitting un-crossed ends in wedge makes installation easy. Eliminates possibility of arms disengaging from wedge hole.
- Only the finest, heavier gauge, oil-tempered spring steel—a product of American Steel & Wire Company—used.
- New horizontal arm design for better fit in journal box assures superior Hold-Rite ability to keep packing from rolling.
- Hold-Rite retainers are completely stress-relieved after bending . . . do not break because of hidden fractures.
- Improved baffle more effective in keeping packing in place under front end of journal.
- Breathing or working action of retainer due to new design keeps packing fluffed, prevents glazing, aids in providing better lubrication.
- Wider opening around journal collar keeps collar and wire separated . . . eliminates possibility of damaging wear.
- Longer, wider horizontal arm provides 24% more bearing surface over packing than any other type.
- Fits perfectly in either bolted or integral type box. Only one size required for 5"x9" and 5½" x10" box, reducing stock required to be kept on hand.
- Turned-up ends prevent gouging packing during installation . . . make installation quicker, easier. No special tools needed.

Comin' ~~'round~~ through on
Here is one of the Nation's most unusual railroads! The Clinchfield Railroad runs, not over, not around... but *through*... the rugged Blue Ridge Mountains. In its 277 miles between Elkhorn City, Ky., and Spartanburg, S. C., there are 55 tunnels. The line
W. VIRGINIA
Elkhorn City
Moss
Clinchfield
KENTUCKY
St. Paul
Kingsport
Johnson City
Erwin
NORTH CAROLINA
TENNESSEE
Marion
Spartanburg
GEORGIA
SOUTH CAROLINA
800
800
800
CLINCHFIELD

# the mountain
# the Clinchfield

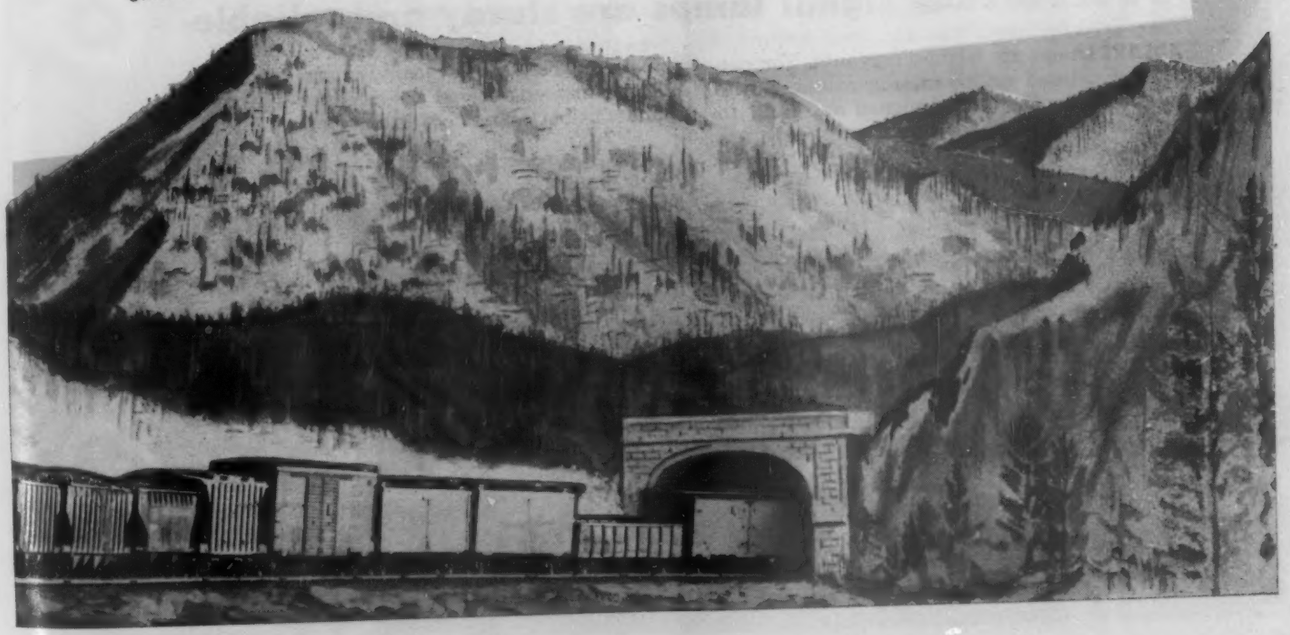
handles huge coal tonnages and fast, Florida perishable freight.

Despite difficult road conditions, the Clinchfield maintains fast, on-time schedules with powerful Diesels, which are lubricated with Sinclair GASCON® Oils.

America's top railroads have discovered that, when road, weather, or hauling conditions are tough, Sinclair GASCON Oils keep Diesels running cleanly, smoothly, and dependably. Are you taking advantage of these fine lubricating oils for *your* Diesels?

## SINCLAIR
## RAILWAY LUBRICANTS

Sinclair Refining Company • Railway Sales • New York, Chicago, St. Louis, Houston






*For additional information, use postcard on pages 119, 120*

**weather or not...**

# Adlake signal lamps are sturdy and reliable

**ADLAKE Lamps** are faithful servants. You can always depend on them, regardless of the weather—for they are designed and built to give service through heat, rain and snow alike.

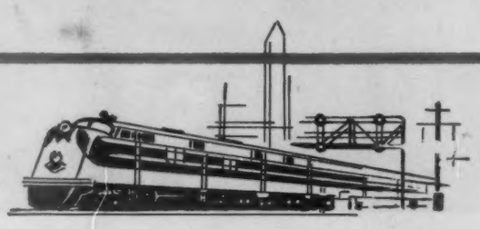
**What's more,** ADLAKE Signal Lamps give this reliable service with a bare minimum of maintenance. They are sturdily constructed and accurately engineered for weather-tightness and efficiency, and need little or no attention.

**Let us show you** how ADLAKE Lamps can save you money! Address 1109 N. Michigan, Elkhart, Indiana.

THE
Adams & Westlake
COMPANY

**Manufacturers of ADLAKE Equipment and Specialties for the Railway Industry**

*Established 1857*
**ELKHART, INDIANA**
**New York • Chicago**



# A MODERN FREIGHT CAR TRUCK

Combining Superior Riding Qualities and Long Service Life

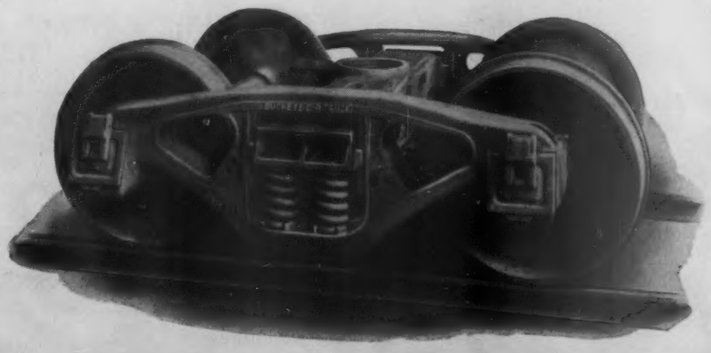
THE BUCKEYE

# C-R

TRUCK

**The Buckeye C-R (Cushion-Ride) Truck is designed to meet the requirements of all types of modern freight service. It includes the following features which provide superior riding qualities and long life:**

- One side frame design of a given capacity is suitable for all AAR Standard or Alternate Standard coil springs with travels of 1-⅝", 2-½", 3-1/16", or 3-11/16".
- Full box section bolster end construction provides maximum strength and adaptability to various spring travels.
- Vertical and lateral control and self squaring action are independent of the load carried.
- Symmetrical friction wedges arranged in the side frame columns have full width bearing on both the bolster and side frame for reduced wear and long life.
- Low rate wedge springs minimize reduction of control due to wear.
- Friction parts are self cleaning to prevent accumulation of dirt in service.



B

## THE BUCKEYE STEEL CASTINGS COMPANY

New York, N. Y. Columbus, Ohio Chicago, Ill.

## EASY TO ROLL OUT...

**This 25-cell, 850-amp-hr air-conditioning battery, weighing about 2580 pounds, is easier to pull out for inspection than a 5-cell tray in any ordinary installation.**

**That's because**

***The Wheels Do the Work***

## Battery inspection can be SIMPLE!

WITH POWER demands on railroad batteries becoming greater, and with turn-around time for passenger trains becoming shorter, there's a growing need for quicker, yet more *positive*, battery servicing during layovers.

It was to meet this situation that engineers of the Edison Storage Battery Division developed the Edison roll-out battery cradle. It's a simple device —a sturdy steel cradle fitted with husky ball-bearing wheels, which can be rolled out along extension tracks. It makes every cell completely accessible for swift, sure servicing.

Don't overlook this new way to cut maintenance costs. Let us assist you in adapting roll-out cradles to existing or proposed compartments. Complete information and typical layouts furnished on request.

During the past three years, the roll-out cradle has been field tested and adopted by several of the nation's top railroads, and the following additional advantages have been established:

*Cleaner batteries:* dirt quickly blown out during servicing.

*Shorter jumpers:* reduced cable footage, less voltage drop.

*Quicker shopping:* entire cradle removable by crane or fork truck.

*Better ventilation:* battery suspended above compartment floor.

*No conflicts:* roll-out compartment also takes regular assemblies.

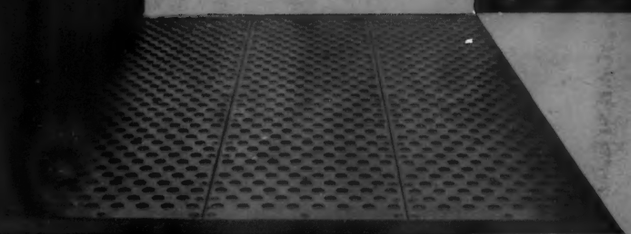
*No greater space:* will accept largest battery now in standard compartment.

**EDISON**
***Nickel · Iron · Alkaline***
**STORAGE BATTERIES**

EDISON STORAGE BATTERY DIVISION OF THOMAS A. EDISON, INCORPORATED, WEST ORANGE, NEW JERSEY

Standard **PRODUCTS**

**...imitated but not equalled!**



because Standard has developed the *best* designs and is the *largest* mass producer of freight car parts.

Industry finds it economical to purchase parts requiring expensive facilities for mass production from sources specializing in those parts.

Naturally, Standard's products are used by all builders of cars.

Standard RAILWAY EQUIPMENT MANUFACTURING COMPANY

310 SOUTH MICHIGAN AVENUE · CHICAGO 4 • 247 PARK AVENUE NEW YORK 17

# 3000 "Testimonials" from the L&N

When a value-wise buyer like the Louisville & Nashville Railroad surveys the field and *then* says, "Build us 3000 more of the same" . . . you can draw your own conclusions.

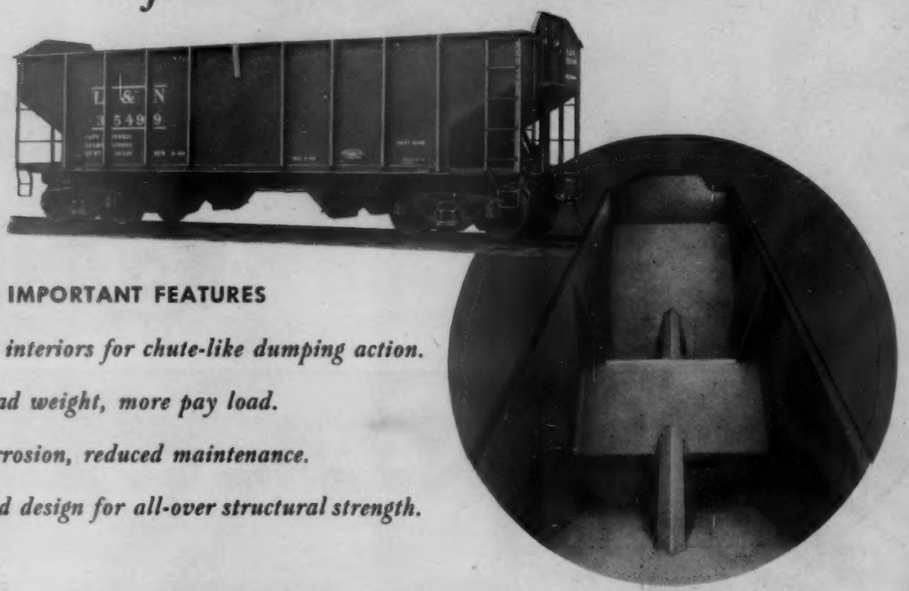
Two years ago, Pullman-Standard built *2000 welded hopper cars* for the L & N . . . cars with many new features, well in advance of conventional carbuilding designs at that time.

Then came thousands and thousands of miles of grueling road service, *proving* to the "Old Reliable" L&N the rugged dependability of these cars. And *now* comes an order for 3000 more . . . 3000 "testimonials."

These new cars will be like the previous ones, because the L & N has verified the *soundness* of Pullman-Standard design and welded construction, and the *economy* of Pullman-Standard assembly-line production.

*Any* railroad that is planning ahead to expand its hopper car fleet can safely order "the same."

**WELDED . . .** ***for greater strength . . . for longer life . . . for economical maintenance!***




**NOTE THESE IMPORTANT FEATURES**

1. ***Smooth interiors for chute-like dumping action.***
2. ***Less dead weight, more pay load.***
3. ***Less corrosion, reduced maintenance.***
4. ***Balanced design for all-over structural strength.***

## Pullman-Standard

CAR MANUFACTURING COMPANY

CHICAGO • NEW YORK • CLEVELAND • WASHINGTON, D. C. • PITTSBURGH
BIRMINGHAM • SAN FRANCISCO

WE'VE CHECKED, WE'VE COMPARED
...AND THE ANSWER IS
"Build us 3000 more
of the same"

# STANDARD PRACTICE FOR

BALTIMORE & OHIO

LINKING 13 GREAT STATES WITH THE NATION — B&O

In October, 1950, the Baltimore and Ohio Railroad standardized on pressure-treatment of all wood flooring and nailing strips for flat and gondola cars.

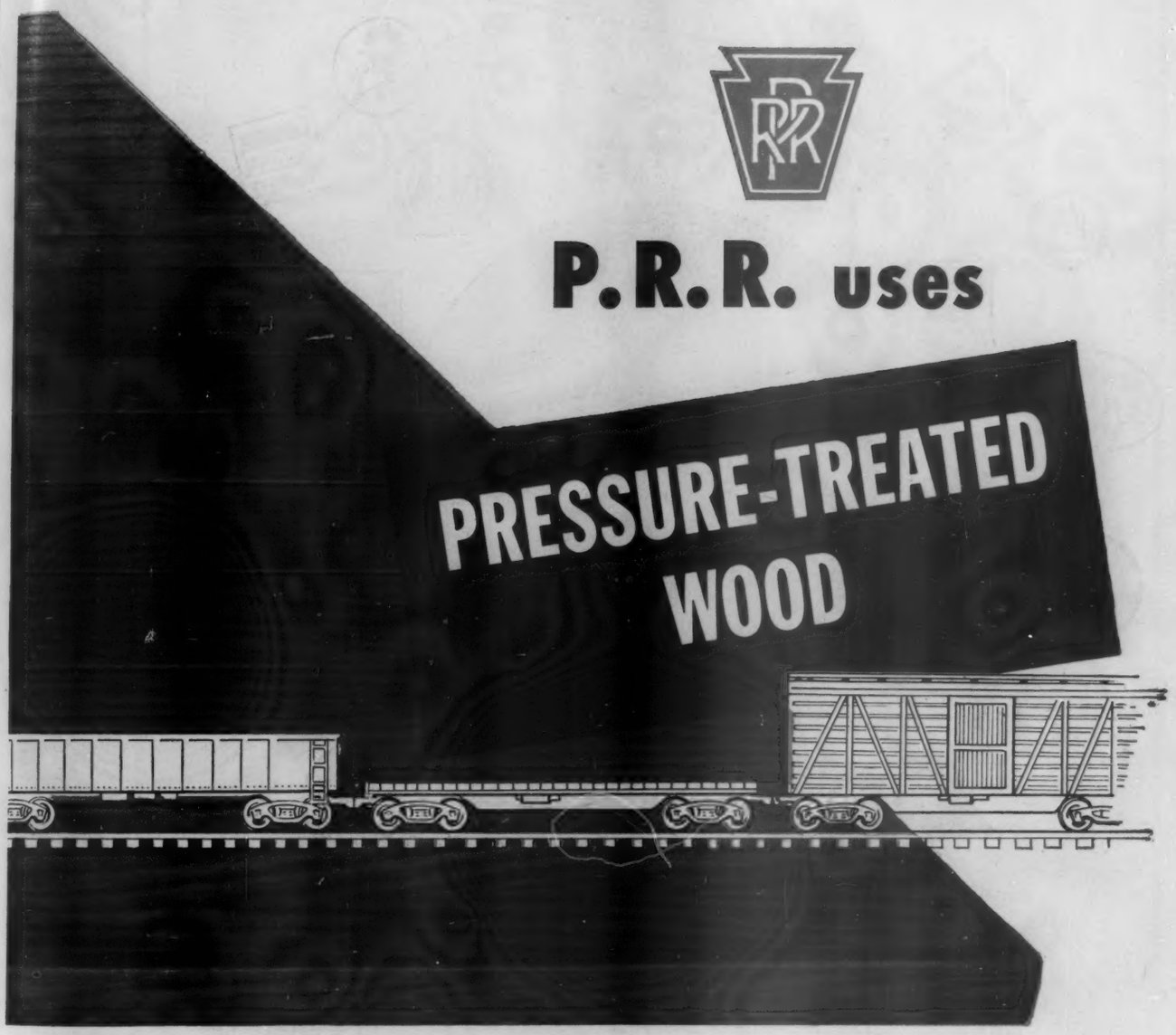
This action followed tests and analyses of comparative costs and length of service of untreated vs. pressure-treated wood. There was a clear indication that to use untreated wood was economically unsound.

B&O's progressive step was in line with their management's policy of standardizing on proven methods of effecting operating economies.

**FREE ANALYSIS**

*We will gladly make an analysis of your operation and submit a report of potential savings to your company through the use of pressure-treated wood. Such service is free. Write, wire or phone Mr. R. H. Bescher, Manager, Technical Department, Orrville, Ohio.*

# P.R.R. uses PRESSURE-TREATED WOOD



WITH ITS THOUSANDS of freight cars the Pennsylvania Railroad must weigh carefully any policy affecting its operation. It is tremendously significant that their tests and checking of costs have resulted in the use of pressure-treated lumber for decking and nailing strips on flat and gondola cars. Pressure-treated wood is also used for replacements. This program is now in effect.

KOPPERS

## PRESSURE-TREATED WOOD

KOPPERS COMPANY, INC., Pittsburgh 19, Pa.



*For additional information, use postcard on pages 119, 120*

NP

## *Automatic* end door operators

To railroad men everywhere, certain names and trademarks are like old friends — well-known, admired, dependable.

In recent years, the trademark of NP Automatic End Door Operators has won the recognition — and respect — of more and more railroaders.

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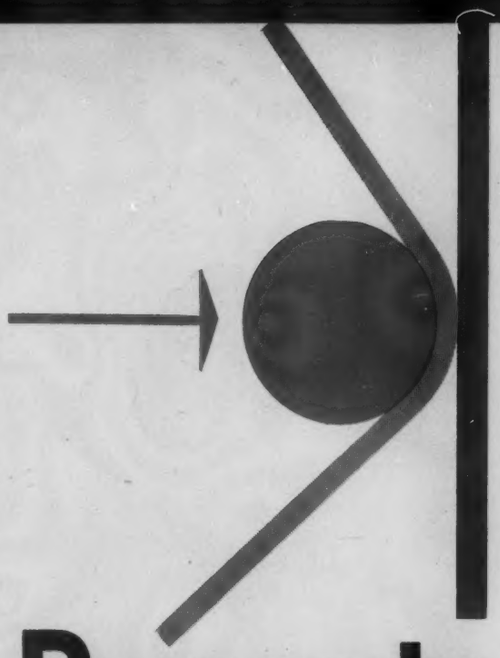

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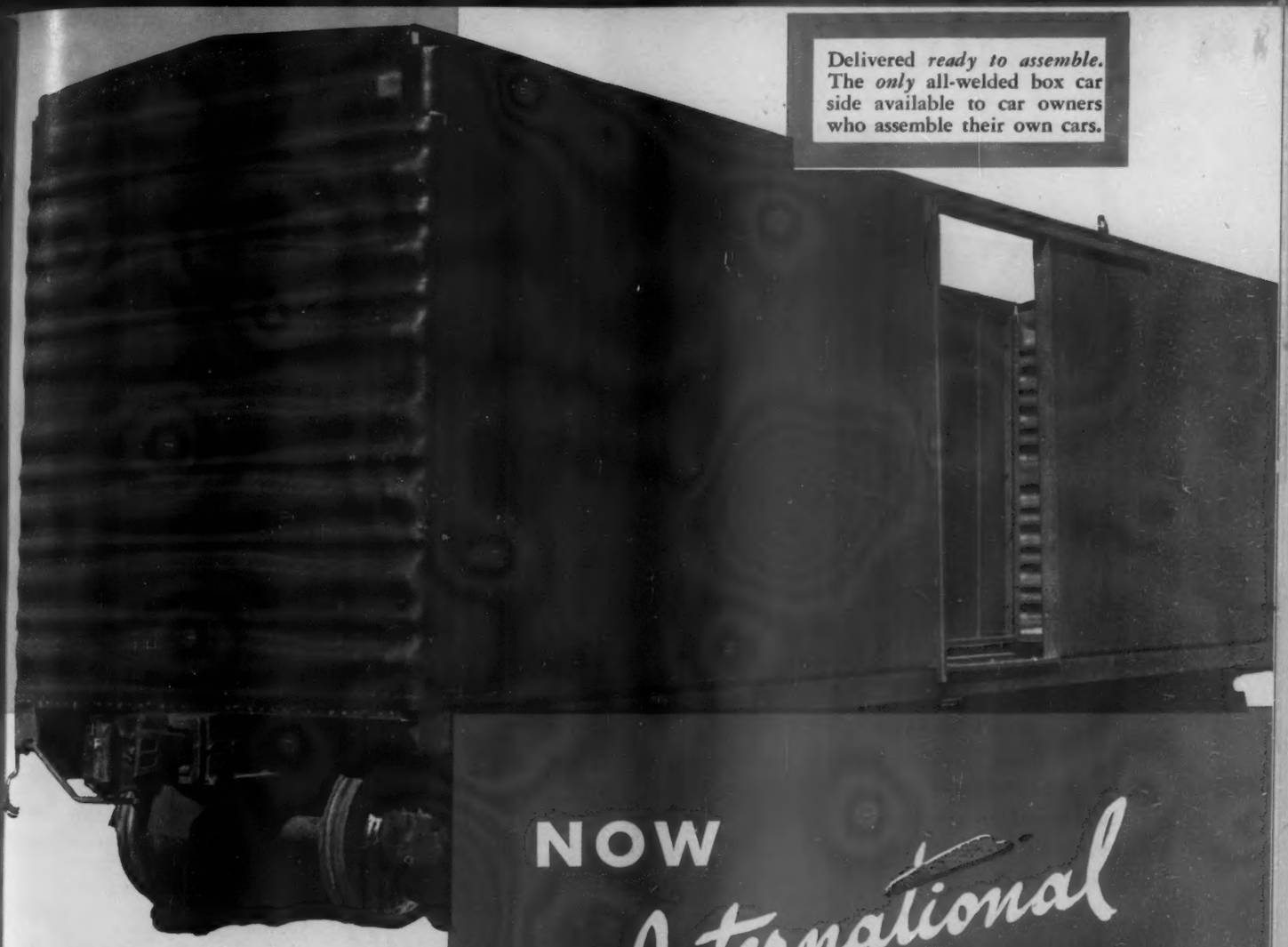

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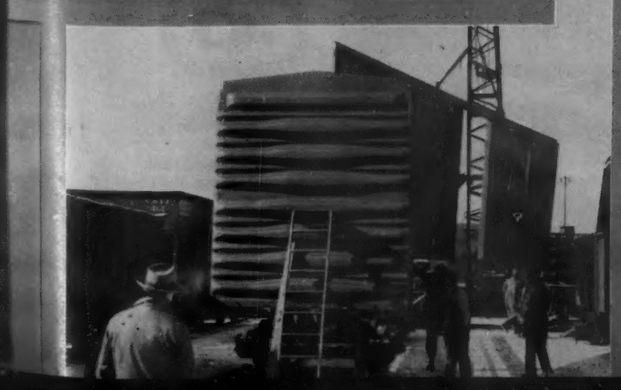

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Cylinder liner holes distorted in use are quickly realigned and rebored on this G. & L. machine. Once the crankcase is placed on the rotary table, various machine movements accurately and rapidly position the work in relation to the cutting tool and machine spindle. No time is lost in cut and try operations. Scales and verniers are depended upon to locate bore center distances. Completing the required boring operations, the rotary table is then indexed 90° to bore the main bearings.

All bearings may be bored and faced on both sides, using a Davis line boring bar with expanding retracting type cutters. Or, if only two or three main bearings require reboring, the nearest sound bearings are bushed to support the boring bar as it bores and aligns the damaged unit.

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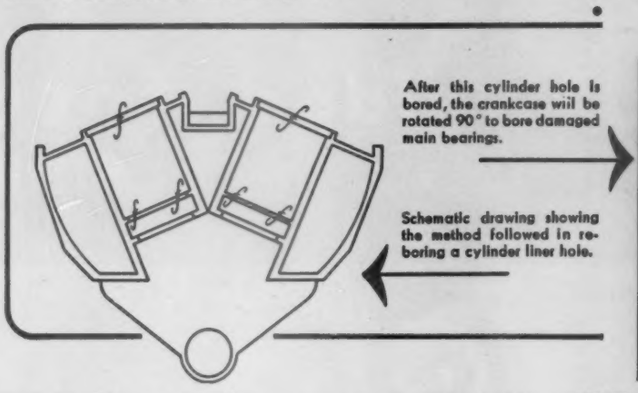

After this cylinder hole is bored, the crankcase will be rotated 90° to bore damaged main bearings.

Schematic drawing showing the method followed in reboring a cylinder liner hole.

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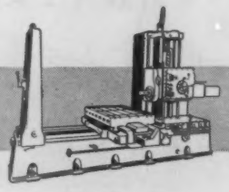
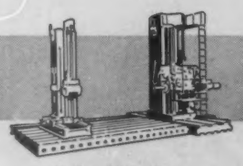


G. & L. Table Type Horizontal Boring Machine



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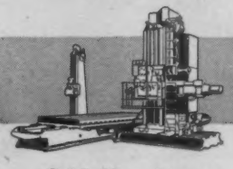

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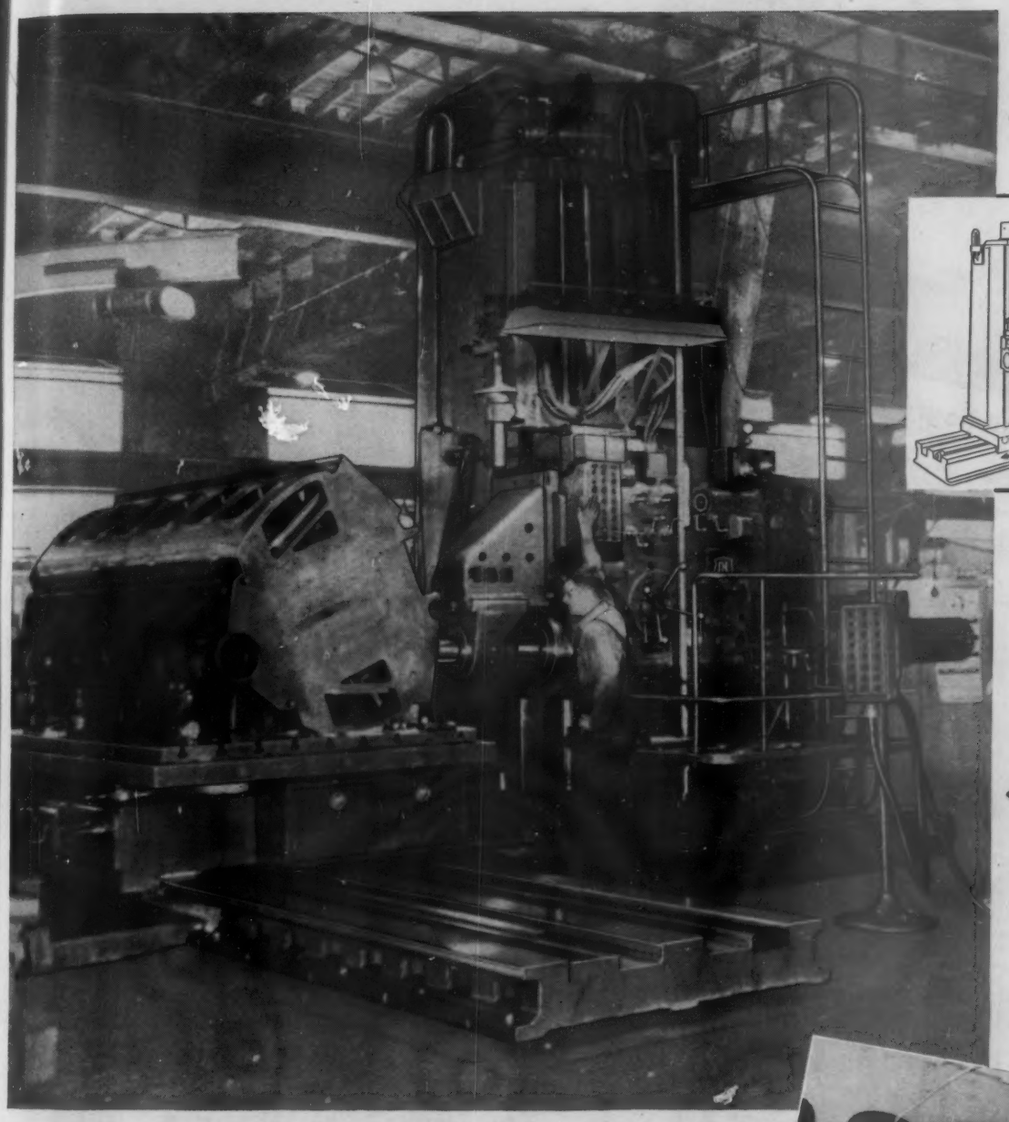
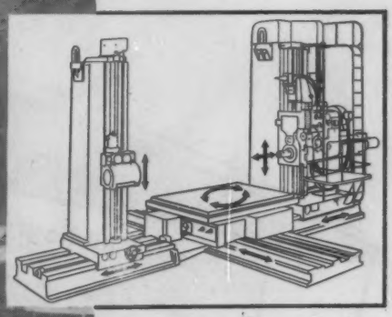
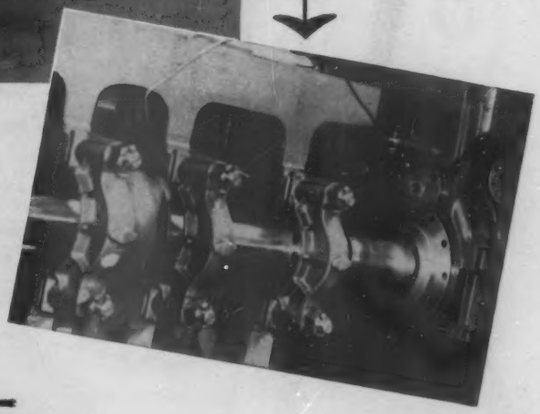




Only a single setup of this Diesel crankcase is required to perform different repair operations. Machine movements plus rotary table movements provide unusual flexibility for rapid positioning.

Reboring or refacing a main bearing is accomplished by bushing two bearings to support the bar. This is a typical G. & L. operation.



## *Typical Diesel Repairs Handled*

1. Line bore main bearings.
2. Re-serrate main bearings and caps.
3. Reface traction motor housings.
4. Rebore suspension bearings and end shields.
5. True crankcase by milling.
6. Re-machine mounting pads and surfaces.

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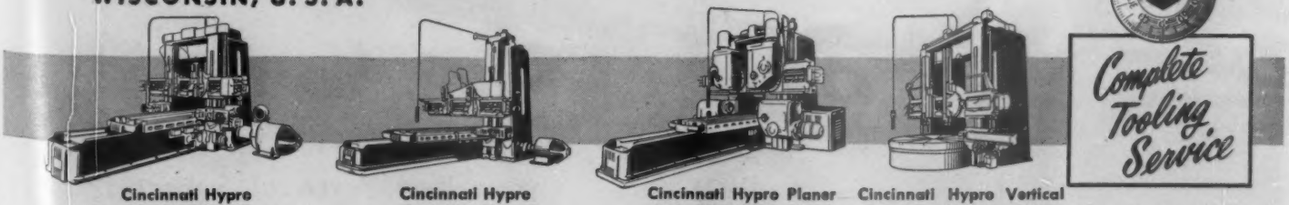

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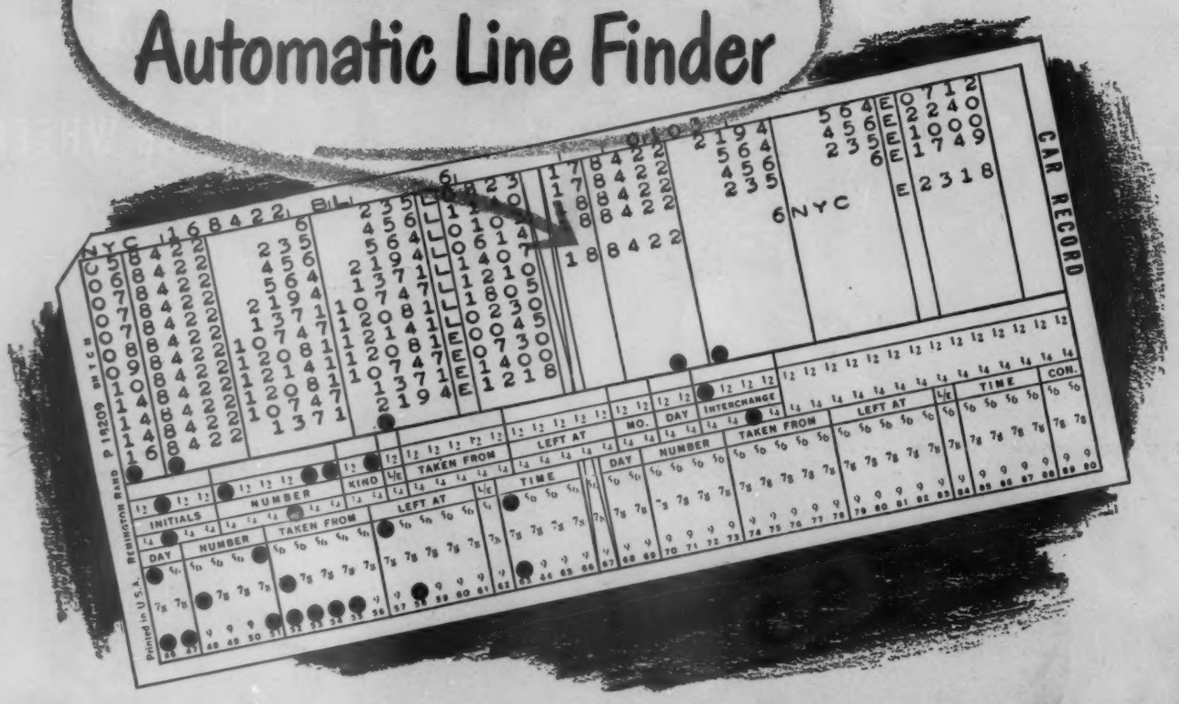


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# MORE ENLIGHTENMENT NEEDED ON THE LABOR SITUATION

Few railroad officers, in their public statements during recent months and even longer, have had anything much to say about one of the most important problems confronting the railroads—that of relations with the railway unions, which is surely a situation calling grievously for more extended ventilation than it has received. This silence, most likely, is the product of hopelessness. What chance is there that Congress, not even able to deal adequately with urgent defense legislation, will undertake major surgery on the Railway Labor Act at any time in the foreseeable future? Why incur wear and tear on the mind and the vocal cords to no effective purpose?

### *The Less Deplorable Alternative*

There is no readily convincing rebuttal to such pessimistic reasoning—except that, when there is a big job of educating public opinion to be done, there is no better time to begin than now. This paper, therefore, notes with satisfaction that Chairman Daniel Loomis of the Association of Western Railways in a June 12 address to a shippers' board meeting at Colorado Springs renewed his recommendations that "emergency board" decisions be made binding on both parties to a dispute. This expedient inevitably gets labeled as "compulsory arbitration"—and there is just as much opposition among "conservatives" as among the leftish elements to such an extension of governmental power.

Nevertheless, careful analysis of the chaotic railway labor situation should be sufficient to convince even the most skeptical that "compulsory arbitration" (i.e., making legally binding the awards of quasi-judicial boards) is the only practicable remedy for chronic work stoppages on the railroads. As deplorable as it undoubtedly is that governmental coercion should invade an area of our economic life which it has not yet occupied, it is still more deplorable that coercion should be exercised in this area under strictly self-seeking private auspices. Making "emergency board" awards binding and enforceable upon the parties to a railway labor dispute would not initiate coercion in a field now free from force. Instead such "compulsory arbitration" would merely substitute governmental coercion for that now exercised under private control. It is a shame that coercion has to exist at all—but where its use is unavoidable, then it should be exercised by government in the public interest instead of by union leaders in their own interest.

### *Control—or Intolerable Situation*

People who object to the exercise of governmental coercion in the settlement of labor disputes should reflect upon the fact that the legalization of a monopoly itself is simply another way of saying that a group of people have been empowered to use coercion in their own interest. This private coercion can be counteracted or

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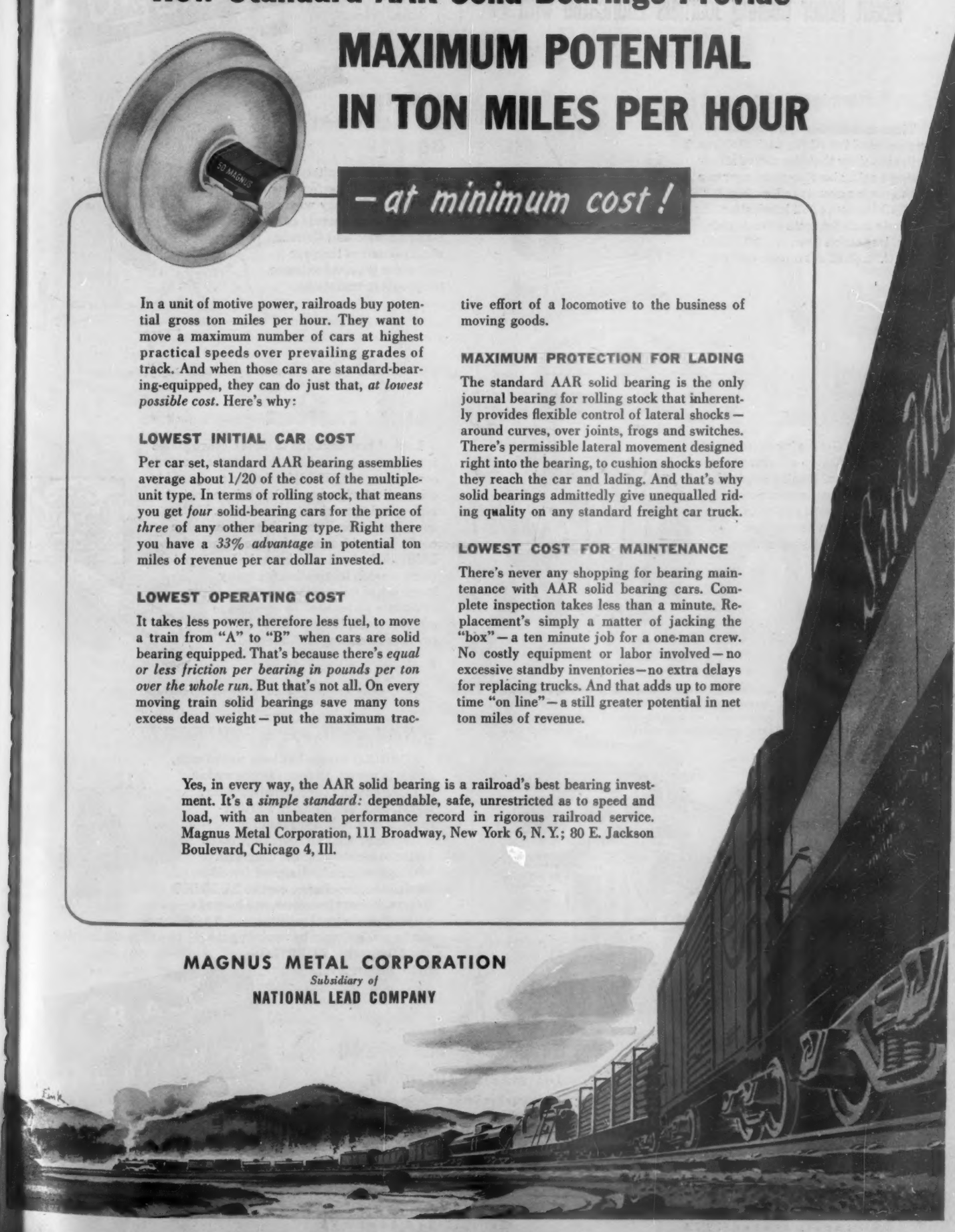
There's never any shopping for bearing maintenance with AAR solid bearing cars. Complete inspection takes less than a minute. Replacement's simply a matter of jacking the "box" — a ten minute job for a one-man crew. No costly equipment or labor involved — no excessive standby inventories — no extra delays for replacing trucks. And that adds up to more time "on line" — a still greater potential in net ton miles of revenue.

Yes, in every way, the AAR solid bearing is a railroad's best bearing investment. It's a *simple standard:* dependable, safe, unrestricted as to speed and load, with an unbeaten performance record in rigorous railroad service. Magnus Metal Corporation, 111 Broadway, New York 6, N. Y.; 80 E. Jackson Boulevard, Chicago 4, Ill.

**MAGNUS METAL CORPORATION**
*Subsidiary of*
**NATIONAL LEAD COMPANY**



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abolished only (1) if the monopoly is destroyed, or (2) if government regulates the monopoly and substitutes some of its coercive power for that being exercised by those who enjoy the privilege of monopoly.

Nobody seriously proposes that the national railway unions be outlawed, and that only local or "company" unions be permitted to exist—yet that would be the only way to destroy monopoly power in the field of railway labor relations and make resort to governmental coercion unnecessary; since then no private coercion would exist for government to regulate and curb. Unless it is politically practicable to put the national railway unions out of business, then governmental control of union operations is inevitable; otherwise, the nation is going to have to put up indefinitely with the intolerable work stoppages which have afflicted the patrons of railroad service frequently in recent years.

### *Appreciation from Discussion*

An adequate appreciation of the deep-seated disease which American political and economic life is suffering from over-extended union power will not come about without a lot of public discussion. Students who have always been identified as "friends of labor" are in the forefront of those who understand and are endeavoring to explain how badly the "labor movement" has been led astray. Foremost, perhaps, among these enlighteners are such economists as Leo Wolman and Sumner H. Slichter. The latter has a recent book, "What's Ahead for American Business,"* which sheds welcome light on many aspects of its important and complex subject—and nowhere more brilliantly than in the obscure field of union relations.

Professor Slichter comes out forthrightly for enforced acceptance of "emergency board" awards on the railroads—not, indeed, for an indefinite period, but for at least six or nine months. He believes that such limited "compulsory arbitration" would be sufficient to induce both parties to settle their differences by bargaining or by voluntary arbitration. We suspect that he may be unduly optimistic, and that enforcement for an indefinite period will be required to avoid work stoppages and formal litigation. Be that as it may, whether for a limited or indefinite period, Professor Slichter concludes that a "compulsory arbitration" feature must be added to the machinery of the Railway Labor Act to protect the public interest. Nobody known to this paper—whose analysis of the situation has been wide and deep enough to entitle him to an opinion of his own—has been able to reach any other conclusion.

Indeed, Professor Slichter's study of the trend of the union movement has aroused further grave suspicions in his mind about it. He believes that "unions are probably strong enough . . . to raise wages faster than the managers and engineers can raise physical output per man-hour." If they do this, as he fears they will, the dollar will steadily decline in purchasing power. He concludes that "the country will eventually have to decide which is the lesser evil—the regulation of collective bargaining or the acceptance of a steadily depreciating dollar."

The American people will not learn the facts of life about this portentous situation until it has had a lot of public discussion. Unless such understanding is secured, the problem will not be grappled with realistically, and solved. The railroads and the country—and railroad employees as well—would be well served if Mr. Loomis would make more speeches like the one he made in Colorado Springs; and if more railroad speakers would join him in his educational efforts.

*Published by Little, Brown & Co., Boston, Mass.

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## THE LESSON OF SOCIALISM

"One thing only, I am convinced, can stop American industry from expanding and improving over the years, from bringing a higher and better standard of living to all people. That one thing is the growth of centralized controls over our economic life. In a near-war emergency like the present, when the demand for certain basic products greatly exceeds the supply, we must of course have controls only to ensure that our military forces get what they need and that what remains is equitably distributed.

"But I believe, just as firmly, that perpetuation of these controls after the emergency ends could throttle our growth. Between V-J Day and the end of 1950, American business invested over $84 billion in new plants and equipment. I do not believe such a tremendous investment in progress will be risked again if companies are not free to determine what products they will make, what prices they will charge, and what profits constitute a proper return on the stockholders' money.

"Call it state planning, or socialism, or what you will, but a system of concentrating all economic controls and economic planning in the hands of a few men withers whatever it touches. In the words of a British economist, 'Central planning ultimately turns every individual into a cipher and every economic decision into blind fumbling, destroys the incentives through which economic progress arises, renders the economic system as unstable as the whims of the few who ultimately control it, and creates a system of wire-pulling and privileges in which economic justice ceases to have any meaning.'

"Socialism is no longer a Utopia; it has a record. That record was created in the suffering and austerity of the people of Great Britain, and it is a record of frustration, blunder, and disappointment. The pitiful failure of the British socialists is now written large in history for everyone to read. I am convinced that our people will read it, and profit by the lesson it teaches all of us.

"This nation has everything it needs to move ahead, to fulfill the aspirations of our people, to defend itself, to offer leadership to the rest of the world. We have the production knowledge and the tools to do even better than we have in the past. We have the men and the imagination and the morale to continue our progress."—*From an address by John K. Hodnette, vice-president, Westinghouse Electric Corporation, at the Edison Electric Institute convention in Denver, Colo., June 5.*

## IS HISTORY REPEATING ITSELF?

Monthly totals of freight-car deliveries, starting with 5,949 in January, reached 9,774 in May. The backlog of orders for domestic service as of January 1 was 124,489 cars. It had increased to 150,628 on June 1.

The prospects for third-quarter deliveries are not altogether clear. Freight-car steel allocations for the third quarter tentatively approved by the Defense Production Administration in May amounted to 672,000 tons, which, according to Defense Transport Administrator Knudsen, would provide for a three months' production of between 21,000 and 24,000 cars — somewhere between 7,000 and 8,000 cars per month. With an additional 11,000 tons since allocated to the freight-car program, which would bring the total third-quarter allotment to 683,000 tons, Mr. Knudsen said he understood that the additional steel, plus some "adjustments," including some rearrangements of the proportions of the different types of steels involved, would step the program up to 9,500 cars per month.

To secure an increase somewhere between a fifth and a third of the third-quarter freight-car output tentatively approved in May with an increase of less than two per cent in the steel tonnage allocated to freight-car construction is placing a highly optimistic dependence on "adjustments" in the program. Despite the statement of Karl R. Bendetsen, assistant secretary of the army, that the Department of Defense feels that the production of 10,000 cars a month is the minimum for the defense effort, civilian requirements for steel seem to be looming large before the Defense Production Administration.

## THERE'LL BE SOME CHANGES MADE — NEXT WEEK

Shortly, and we confidently expect in our next issue, we are going to make some changes in the arrangement of the printed matter in this magazine. We hope these changes will make the paper easier to read—but if they don't please let us know and we'll revise further.

Briefly, what we are going to do is to take the more important news articles from the "General News" section, now over toward the back of the magazine, and put them right up here, along with the editorial comment. Our assumption is that the things people want to know about first are the news events—and so it's logical to put them up in the front of the magazine.

Then, another thing, we're going to expand our "Week at a Glance" report to two pages; and give you a lot more news briefs in that department than we have before. In fact, we're going to "go informal" in those pages and print some of the rumors that get talked around in railroad circles but which heretofore have not found their way into print.

Our feature articles are not going to suffer in this reshuffle. We expect to keep right on improving them—making them not only informative but still more useful.

A good garden is one which not only is full of good vegetables, but which is free of weeds. A good industry magazine ought to be a good deal like a good garden—lots of nourishment and mighty little there that isn't. We have over a score of experienced editorial gardeners working hard on this particular patch and we hope the results of their labors are becoming more evident all the time. If not—you please tell us.

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### RAILROADS NEED MONEY

"Seldom, possibly never, has the Interstate Commerce Commission faced a more difficult, or at any rate a more embarrassing situation than it does now. The railroads of the country are asking for higher freight rates, one might almost say as usual. Their opening presentation appears to present a strong case. But the Office of Price Stabilization has entered an appearance in opposition; this newspaper's Washington bureau reports that several other government agencies are opposing the carriers in this matter.

"So we have one government tribunal sitting in a quasi-judicial capacity on a cause directly affecting only the rail carriers and the users of their service, while other arms of the government come into the proceedings, apparently as friends of the court. The O.P.S., as you might guess, objects on the theory that a freight rate increase now would be price-inflationary. The fact is, of course, that if the railroads need higher service rates the reason is that their operating costs have already been inflated. The 15 per cent higher rates, if allowed, would be an effect, not a primary cause, of inflation.

"As the Association of American Railroads puts their case, their aggregate operating costs and taxes are expected to exceed those of 1950 by something like $971 million. Since net operating earnings last year were $1,040 million, it is apparent that without a substantial increase in gross revenues this year the total return on total carrier investment would, according to these calculations, be practically wiped out.

"But the A.A.R. looks for greater revenue, both because of the 2 per cent increase in freight rates allowed in March and because of the uptrend in carloadings so far this year. Even so, the forecast of the carriers' accountants is that without the rate increase now asked (which is to include the interim advance) the yield on their aggregate capital investment would be reduced from the 3.95 per cent of 1950 to 2.97 per cent this year; that with the rate advance here in question the railroads as a whole would be in a position to realize an annual return on investment of 4.80 per cent.

"It is an old story that the regulated public services fare badly in a period of persistent rise in prices and wages. Adjustment of service charges to fit a new cost scale commonly lags behind the times. But the other publicly regulated services—gas, electricity, telephones—are not being pushed as near the ragged edge as are the railroads.

"If the Office of Price Stabilization has a job it can do, it would be well advised to stick to that job and leave to the Interstate Commerce Commission the task which Congress committed to that body."—*An editorial from the Wall Street Journal, May* 18, 1951.

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**DIESEL FREIGHT SERVICE—OPERATING COMPARISON**

CUMULATIVE ENDING DECEMBER 31, 1950

| RAILROAD CODE | | A | B | C | D | E | EE | G | K | L | M | N | O | P | R | U | V | W | Y | Z | AVERAGE ALL ROADS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **OPERATING INDICATORS** | | | | | | | | | | | | | | | | | | | | | |
| NO. OF MONTHS DATA COVERS | | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | - |
| AVERAGE AGE OF LOCO. UNITS (MO'S.) | | 61 | 55 | 47 | 43 | 62 | 30 | 27 | 46 | 25 | 40 | 22 | 35 | 22 | 44 | 38 | 56 | 24 | 34 | 26 | 34 |
| AVERAGE MILES PER LOCO. UNIT PER MO. | | 10441 | 7635 | 12523 | 8756 | 7567 | 7344 | 8438 | 8596 | 9611 | 6454 | 8620 | 9979 | 8356 | 8337 | 12635 | 9381 | 7810 | 5762 | 10867 | 9350 |
| % HRS. AVAILABLE OF HRS. IN PERIOD | | 84.1 | 87.2 | - | 90.5 | - | - | 88.8 | 86.8 | 98.2 | 82.6 | 93.2 | 86.3 | 94.4 | - | 82.0 | 89.3 | 91.5 | 84.6 | 81.8 | 87.9 |
| % HRS. WORKED OF HRS. IN PERIOD | | 69.8 | 39.8 | - | 58.8 | - | - | 54.5 | 63.0 | 41.1 | 41.1 | 46.2 | 71.4 | - | 63.2 | 61.5 | 52.0 | - | 55.2 | 76.0 | 58.0 |
| AVERAGE TRAIN MILES PER TRAIN HOUR | | 22.7 | 24.4 | 28.6 | 23.2 | 23.4 | 19.6 | 17.8 | 22.1 | 21.4 | 17.0 | 22.8 | 24.0 | 21.4 | 22.6 | 28.8 | 25.6 | 19.0 | 17.9 | 26.0 | 23.4 |
| AVERAGE TRAILING MGTM PER TRAIN HOUR | | 103.4 | 82.2 | 105.4 | 66.9 | 60.8 | 51.2 | 35.1 | 63.5 | 49.0 | 39.4 | - | 74.2 | 55.2 | 65.2 | 105.6 | 78.7 | 67.8 | 71.0 | 88.1 | 76.2 |
| AVERAGE GROSS TONS PER LOCO. UNIT | | 1220 | 854 | 893 | 1091 | 1047 | 1379 | 1543 | 730 | 938 | 975 | - | 1122 | 1364 | 1160 | 1116 | 862 | 1491 | 1596 | 1275 | 1038 |
| AVERAGE HORSEPOWER PER UNIT | | 1400 | 1467 | 1439 | 1412 | 1364 | 1500 | 1500 | 1439 | 1500 | 1499 | 1469 | 1440 | 1500 | 1436 | 1404 | 1404 | 1491 | 1437 | 1500 | 1460 |
| FUEL CONSUMPTION (IN GALLONS) | PER MGTM | 1.52 | 1.95 | 1.53 | 1.75 | 1.78 | 1.56 | 1.68 | 2.63 | 1.79 | 2.10 | - | 1.74 | 1.66 | 1.56 | 1.49 | 2.04 | 1.48 | 1.51 | 1.61 | 1.79 |
| | PER LOCO. UNIT MI. | 1.86 | 1.66 | 1.37 | 1.91 | 1.86 | 2.15 | 2.60 | 1.92 | 1.68 | 2.05 | 2.12 | 1.96 | 2.26 | 1.81 | 1.66 | 1.76 | 2.20 | 2.41 | 2.05 | 1.86 |
| LUBE OIL CONSUMPTION (IN GALLONS) | PER MGTM | .014 | .024 | .013 | .016 | .023 | .015 | .012 | .030 | .014 | .018 | - | .018 | .018 | .011 | .014 | .029 | .013 | .015 | .015 | .018 |
| | PER LOCO. UNIT MI. | .017 | .020 | .011 | .018 | .024 | .021 | .018 | .022 | .014 | .017 | .025 | .020 | .024 | .013 | .015 | .025 | .020 | .024 | .019 | .020 |
| **SIGNIFICANT OPERATING COSTS PER MGTM (Cents)** | | | | | | | | | | | | | | | | | | | | | |
| REPAIRS | | 11.22 | 13.10 | 8.54 | 13.09 | 17.70 | 13.20 | 10.05 | 16.40 | 7.86 | 19.63 | - | 10.10 | 7.76 | 14.09 | 8.67 | 14.94 | 7.30 | 17.04 | 11.93 | 10.91 |
| FUEL | | 14.23 | 17.78 | 14.03 | 16.21 | 15.63 | 13.83 | 15.26 | 24.66 | 15.45 | 22.14 | - | 14.38 | 14.71 | 15.80 | 12.17 | 16.90 | 16.25 | 14.22 | 16.18 | 16.06 |
| LUBRICANTS | | .91 | 1.22 | .69 | .84 | 1.01 | .80 | .68 | 1.75 | .58 | .76 | - | .92 | .79 | .56 | .73 | 1.31 | .63 | .75 | .81 | .98 |
| TOTAL | | 26.36 | 32.10 | 23.26 | 30.14 | 34.34 | 27.83 | 25.99 | 42.81 | 23.89 | 42.53 | - | 25.40 | 23.26 | 30.45 | 21.57 | 33.15 | 24.18 | 32.01 | 28.92 | 27.95 |
| **ANALYSIS OF REPAIRS PER MGTM (Cents)** | | | | | | | | | | | | | | | | | | | | | |
| REPAIRS—ENGINE: | LABOR | 3.24 | 2.55 | 3.16 | - | - | - | 2.42 | 4.32 | 1.53 | 6.06 | - | 3.02 | - | - | - | 2.63 | - | 4.44 | - | 2.82 |
| | MATERIAL | 2.03 | 2.37 | 1.62 | - | - | - | .50 | 3.55 | .96 | 2.63 | - | 3.49 | - | - | - | 1.57 | - | 2.07 | - | 1.69 |
| | TOTAL | 5.27 | 4.92 | 4.78 | - | - | - | 2.92 | 7.87 | 2.49 | 8.69 | - | 6.51 | - | - | - | 4.20 | - | 6.51 | - | 4.51 |
| REPAIRS—ELECTRICAL: | LABOR | 1.68 | 1.19 | .72 | - | - | - | 1.71 | 1.97 | 1.61 | 2.10 | - | .98 | - | - | - | 2.30 | - | 3.41 | - | 1.61 |
| | MATERIAL | .89 | 3.12 | 1.04 | - | - | - | .44 | 3.07 | .91 | .78 | - | 1.31 | - | - | - | 3.56 | - | 2.60 | - | 2.02 |
| | TOTAL | 2.57 | 4.31 | 1.76 | - | - | - | 2.15 | 5.04 | 2.52 | 2.88 | - | 2.29 | - | - | - | 5.86 | - | 6.01 | - | 3.63 |
| REPAIRS—OTHER: | LABOR | 1.40 | 2.39 | 1.30 | - | - | - | 4.13 | 2.28 | 1.52 | 5.64 | - | .80 | - | - | - | 2.98 | - | 3.18 | - | 2.20 |
| | MATERIAL | 1.98 | 1.48 | .70 | - | - | - | .85 | 1.21 | 1.33 | 2.42 | - | .50 | - | - | - | 1.90 | - | 1.34 | - | 1.17 |
| | TOTAL | 3.38 | 3.87 | 2.00 | - | - | - | 4.98 | 3.43 | 2.85 | 8.06 | - | 1.30 | - | - | - | 4.88 | - | 4.52 | - | 3.37 |
| TOTAL REPAIR LABOR | | 6.32 | 6.13 | 5.18 | 7.85 | 9.43 | 6.10 | 8.26 | 8.57 | 4.66 | 13.80 | - | 4.80 | 4.13 | - | 4.75 | 7.91 | 3.56 | 11.03 | 6.65 | 6.19 |
| TOTAL REPAIR MATERIAL | | 4.90 | 6.97 | 3.36 | 5.24 | 8.27 | 7.10 | 1.79 | 7.83 | 3.20 | 5.83 | - | 5.30 | 3.63 | - | 3.92 | 7.03 | 3.74 | 6.01 | 5.28 | 4.61 |
| TOTAL REPAIRS | | 11.22 | 13.10 | 8.54 | 13.09 | 17.70 | 13.20 | 10.05 | 16.40 | 7.86 | 19.63 | - | 10.10 | 7.76 | 14.09 | 7.67 | 14.94 | 7.30 | 17.04 | 11.93 | 10.91 |
| REPAIRS (CENTS) PER GAL. FUEL CONSUMED | | 7.37 | 6.73 | 5.57 | 7.49 | 9.94 | 8.48 | 5.96 | 6.24 | 4.39 | 9.33 | 6.50 | 5.79 | 4.68 | 9.03 | 5.82 | 7.30 | 4.94 | 11.29 | 7.42 | 6.13 |
| **SIGNIFICANT OPERATING COSTS PER LOCOMOTIVE UNIT MILE (Cents)** | | | | | | | | | | | | | | | | | | | | | |
| REPAIRS | | 13.68 | 11.19 | 7.63 | 14.28 | 18.54 | 18.20 | 15.51 | 11.98 | 7.38 | 19.13 | 13.80 | 11.33 | 10.59 | 16.34 | 9.68 | 12.88 | 10.88 | 27.19 | 15.23 | 11.49 |
| FUEL | | 17.36 | 15.19 | 12.54 | 17.69 | 16.36 | 19.07 | 23.55 | 18.01 | 14.49 | 21.58 | 20.79 | 16.13 | 20.08 | 18.33 | 13.58 | 14.57 | 24.22 | 22.70 | 20.63 | 16.68 |
| LUBRICANTS | | 1.11 | 1.04 | .62 | .92 | 1.06 | 1.11 | 1.06 | 1.28 | .55 | .74 | 1.20 | 1.03 | 1.08 | .65 | .81 | 1.13 | .94 | 1.20 | 1.04 | 1.02 |
| TOTAL | | 32.15 | 27.42 | 20.79 | 32.89 | 35.96 | 38.38 | 40.12 | 31.27 | 22.42 | 41.45 | 35.79 | 28.49 | 31.75 | 35.32 | 24.07 | 28.58 | 36.04 | 51.09 | 36.90 | 29.19 |

END 399-D 4-51 Report includes all builders. (OVER)

**AN "OPERATING COMPARISON REPORT" has been compiled for five years by Electro-Motive and furnished to participating railroads. It sets forth statistics of performance and costs for diesel locomotives not generally available from I.C.C. statistics. The names of the participating railroads are not printed, but some of the roads in the plan exchange their code numbers and are able to make direct comparisons with each other by using the report. Currently some 34 railroads submit material for, and receive, the report. Separate tabulations are issued for locomotives in freight service, passenger service and yard service, respectively. Here is reproduced, for the first time in a periodical with a public circulation, a sample page from that report—namely, the first page of the report on diesel freight service, containing the full data on 18 roads, plus the average of 34 roads. The remaining companies—AA to SS—are covered on the reverse of the report (which is not reproduced here)**

# How to Get Maximum Economies From Diesel Locomotives

By N. C. DEZENDORF,
Director of Sales and Service
Electro-Motive Division, General Motors Corporation

**The benefits of dieselization fall into two categories. First, are the savings which come automatically from the substitution of diesel power for steam power, based upon such factors as fuel cost, availability and maintenance time. These direct savings depend in large measure on the kind of service to which the new power is assigned. In the final stages of complete dieselization, these savings may be small in relation to investment.**

**But "the indirect and collateral savings" from diesel power, the second category of benefits, may be enormous even in services where the potential utilization is relatively small. To gain these kinds of benefits, the diesel locomotive must be used as a new tool —not merely as a substitute form of power.**

**A paper delivered before the New York Society of Security Analysts on June 1 explains how one locomotive builder is helping railroad managements to attain the maximum economies from dieselization. This is a condensed version.—Editor.**

One reason why there is little similarity in the savings and return-on-investment statements of various railroads concerning diesel-power is that the amount of savings varies widely depending upon the application. This is for the reason that the operating savings are directly proportional to utilization.

In acquiring their first diesel locomotive most railroads have followed the practice of making the initial applications where the immediate savings would be the greatest. Thus, the first diesel switchers were assigned to the three-trick operations where they could work around the clock and pay for themselves in fuel and repair

# What are the facts

## About Roller Bearing Journals Lubricated with LUBRIKO GREASE?

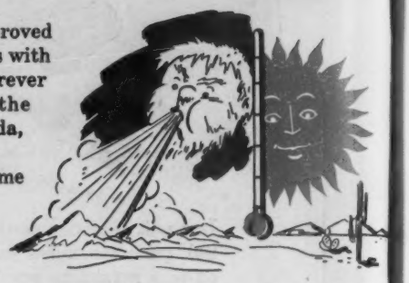
LUBRIKO GREASE
M-1 SPECIAL FOR RAILROADS

### COST OF LUBRICATION

Time-cost studies by railroad test engineers of two of the nation's largest railroads show that the cost of lubricating a roller bearing passenger car with grease amounts to less than ONE THIRD the cost of oil lubrication. This estimate includes costs of materials, labor, inspection time, etc. SAVING: More than $2.00 out of every $3.00.

### LUBRIKO— AN ALL-WEATHER GREASE

It has been definitely proved that LUBRIKO performs with maximum efficiency wherever railroad cars travel in the United States and Canada, at all seasons of the year and under the most extreme temperature variations.

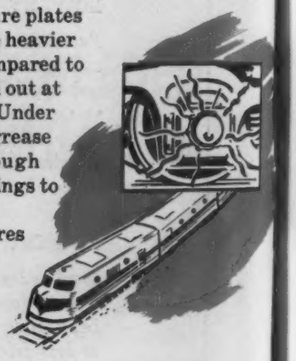


### SHOP FACTORS

LUBRIKO Grease is easily stored and applied without exposure to contamination. Easily applied through plug openings or pressure fittings with suitable pumps which can be supplied with accurate metering devices.

### SAFETY FACTORS

Loss of lubricant due to loose closure plates is reduced to a minimum through the heavier consistency of LUBRIKO Grease compared to oil, particularly when oil has thinned out at high speed operating temperatures. Under very drastic conditions, where even grease could be accidentally dumped, enough LUBRIKO would remain on the bearings to carry on safe lubrication for many hundreds of miles. Since no plugs, wires or closure plates need be removed to add lubricant, the possibility of careless re-closing is eliminated.



### INSPECTION CYCLES LENGTHENED

The new A.A.R. inspection regulations, *again lengthened*, now only require the addition of 1 lb. of grease every 90 days compared to the frequent inspections and lubricant additions with oil.

### WHAT KIND OF BEARINGS?

LUBRIKO Grease has been tested with, and is in use on, all four famous makes of roller bearing car journals, Fafnir, Hyatt, SKF and Timken. Furthermore, it is A.A.R. approved for interchange with all four. Important factor to consider is that even with bearings originally designed for oil lubrication, the change over to LUBRIKO Grease, in most instances, can be made without mechanical modification. The change can be made simply by removing the oil, cleaning the housing and filling with LUBRIKO to the proper level.

ALL 4

*ENGINEERING DATA ON REQUEST*

THE TEST TELLS

**You are SAFE with LUBRIKO**

*THE MASTER LUBRICANT*

Bearings Run Cooler With Grease

A. A. R. APPROVED FOR INTERCHANGE

**MASTER LUBRICANTS COMPANY** PHILADELPHIA, PA.

MANUFACTURERS OF HIGH-GRADE INDUSTRIAL LUBRICANTS FOR OVER 50 YEARS

LOS ANGELES • BOSTON • SAN FRANCISCO

Incorporated 1908 Established 1891

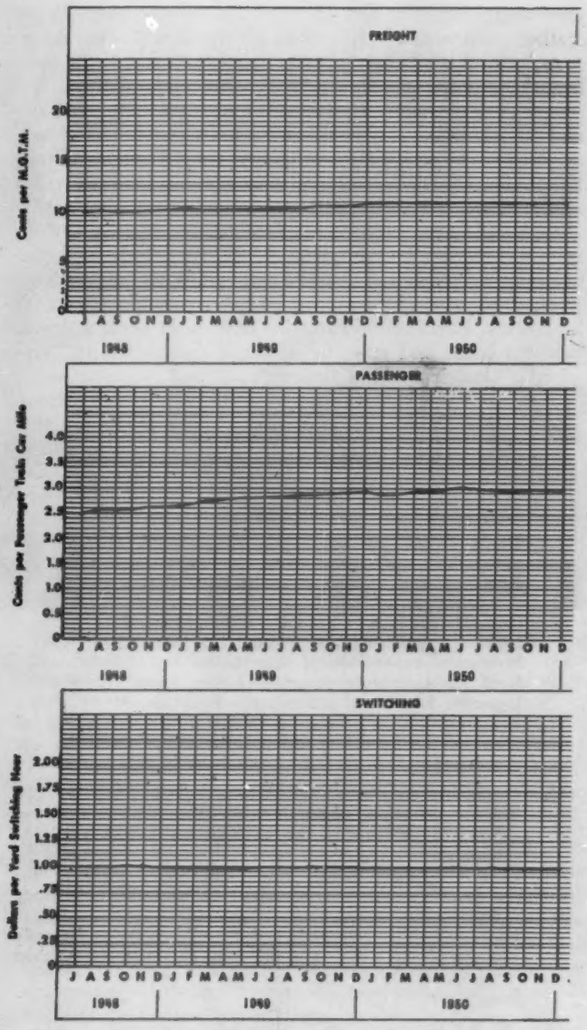
savings alone in three years. The first diesel passenger locomotives were assigned to the hot-shot name trains where they could accumulate 30,000 miles per month in high-speed service and pay for themselves in four or five years from direct savings alone. The first diesel freight locomotives were assigned to symbol trains where schedules could be improved, trains consolidated, helpers eliminated, and direct economies could pay for locomotives in from two to four years. The various combinations of these applications on various railroads naturally produce a great variety of reported savings.

### *Beyond "Cream" Runs*

As more diesel power is acquired, and as all of the through services and heavy switching assignments are covered, utilization tends to decline in the intermediate stage, with a resulting reduction in savings. Local passenger and freight services, two-trick switching assignments, helper services, transfer and humping operations, all can show substantial savings which are sufficient to pay for the equipment in from four to seven years. Much can be done from a management standpoint to increase utilization in this area, which will be discussed later.

In the final stages of complete dieselization are found applications which show the minimum of direct savings. They are branch-line services, work-train locomotives, commuter services, and stand-by locomotives for seasonal requirements and to replace regular locomotives during shopping periods. While the direct savings may be small in relation to the investment required, the indirect and collateral savings can be enormous. As long as any steam locomotives at all are in regular service over the system, all supporting services for steam operation must be maintained. These include intermediate and terminal roundhouses, water towers and water treatment plants, coaling stations, cinder dumps, back shops, and all of the specialized crafts which these facilities require for even intermittent operation.

To hasten the realization of these secondary and collateral savings in advance of complete dieselization, a few large railroads have elected to dieselize completely certain sections of their systems, retaining complete or partial steam operation in other sections until they receive sufficient diesel power to retire the steam power progressively by sections. In this manner, savings can be substantially increased during the intermediate and final periods.


FREIGHT
Costs per M.G.T.M.
PASSENGER
Costs per Passenger Train Car Mile
SWITCHING
Dollars per Yard Switching Hour
J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D
1948
1949
1950

**DESPITE INCREASES IN GENERAL LEVEL OF PRICES,** repair costs to diesel locomotives operated by 34 roads participating in Electro-Motive's "Operating Comparison Reports" show a remarkable stability since January 1948

### *Management Economies*

The diesel locomotive is still a new tool for the movement of trains on our railroads. Much still remains to be learned concerning the methods of using this new tool to the utmost advantage in building traffic, offsetting competitive forms of transportation, and in effecting maximum economies of operation. The knowledge and experience which are required to exploit fully the potentials of the diesel locomotive lie within the area of management decisions. To the extent that railroad managements exhaust these potentials will they approach the maximum economies attainable. Conversely, to the extent that railroad managements tend to follow steam practices in the application of diesel locomotives will the maximum economies fail to be realized—even though the savings are substantial and the railroad is satisfied with its diesel purchases.

Although railroad accounting is well established and controlled by I.C.C. regulations, and while all of the basic data for the analysis of diesel locomotive performance is available, there exists no separate summary of diesel locomotive operation and expense information for comparing one railroad with another. In developing management techniques for improving operations, a factual guide to deficiencies requiring management decisions is a basic necessity. Since one did not exist, we at Electro-Motive decided about five years ago, to create an "Operating Comparison Report" provided we could obtain the cooperation of railroad managements in supplying the basic data. (Sample page is reproduced herewith—EDITOR.) From a small modest beginning, we now have over 30 of the principal railroads of the country sending us regular monthly reports covering the significant factors in diesel locomotive operation and expense. For the most part, the data cover all diesel units regardless of make, but the freight and passenger figures reflect approximately 90 per cent Electro-Motive ownership, the switchers approximately 60 per cent.

On the report, individual railroads are coded. Many roads exchange code letters with each other, but Electro-Motive respects the railroads' desire for anonymity. There is a separate report for freight, passenger, and

yard switching. The first part of the report covers "operating indicators," the second "significant operating costs," the third "analysis of repairs" and finally "significant operating costs per locomotive unit mile." The report is designed to high-spot the controllable variables and to eliminate uncontrollable fixed expenses. For example, "crew costs" are not shown since they are fixed by annual contracts and are very similar between railroads. Also, "enginehouse expense" has been eliminated since there is no uniform method employed in splitting this item between steam and diesel. The statistics have been carefully selected to indicate availability, utilization, work done, and the essential costs of fuel, repairs, and lubricants. Furthermore, repairs have been broken down between labor and material in three classifications, "engine," "electrical," and "other."

Because we at Electro-Motive know the names represented by each symbol, it is possible for us to use the report in carefully evaluating the management decisions which are responsible for adverse results and to assist these managements to bring about an improvement. Here are a number of operating conditions which have been disclosed by the use of this report—and correction started by conferences with the railroad managements.

(1) Availability
- Inadequate facilities for maintaining locomotives
- Lack of special tools for maintaining locomotives
- Insufficient supervision of shop forces
- Need for educational program of shop forces
- Improper location of maintenance facilities
- Following steam practice of holding locomotives out of service for repair of components which could be exchanged

(2) Utilization
- Holding four-unit locomotive for maximum tonnage instead of dispatching two or three units with available tonnage
- Failure to cycle motive power in orderly sequence for mileage maintenance causing accumulation of heavy repairs
- Failure to revise schedules and consolidate trains formerly operated on steam schedules to obtain most efficient cycling of locomotives in keeping with traffic demands
- Failure to utilize locomotives assigned to through runs for local assignments during lay-over periods

(3) Repair Costs
- Failure to follow mileage recommendations for overhaul of components
- Mixing of lubricating oils contrary to recommendations
- Improper cleaning of filters
- Repair of components by shop methods, instead of return to manufacturer for rebuilding by factory methods
- Finding unnecessary work to retain people in shops required for steam operation, but not needed for diesel
- Need for improved tools and equipment for precision maintenance operations
- Need for education of supervision and staff on correct labor saving methods

In addition to these special analyses for the benefit of particular railroads, the "Operating Comparison Report" lend itself to the preparation of supplemental reports, of which two may be worthy of comment. The first is a "Rating Report" in which an evaluation is made of the various operational and mechanical factors to determine the relative standing of the participating railroads in their effective use of diesel power. This report is very valuable to us in singling out railroads for special assistance in correcting difficulties and in bringing about management decisions for necessary improvement. It also is valuable to record changes in position and thereby chart progress.

A second report is a series of charts showing the monthly and cumulative repair costs for each railroad compared with the average of all railroads, divided into the three classes of service, freight, passenger, and switching. [See accompanying graphs—EDITOR.] This report is of particular value to the mechanical departments of the railroads and frequently points out the need for corrective actions before they would otherwise have been indicated.

Progressive development of the diesel locomotive has produced economies in three major areas—performance, maintenance, and manufacturing methods. Each has results which find reflection in railroad operation. In the

**"GET ON THE BELL"—instead of the ball, is the new aim of students of the Engineering School of the University of Illinois. The bell was presented to the university's Chicago undergraduate division by Wayne A. Johnston, president of the Illinois Central, on May 14. On its polished surface will be engraved each year the names of two or three top-ranking students of the school. It was this same bell, President Johnston explained, that literally "rang in the dawn of the second century of the Illinois Central" last February 10 at the opening of the I.C.'s centennial celebration. Admiring the bell after the formal presentation are (left to right): Henry M. Musal and Harry D. Newman, "bell" honor students for January 1951; Frederick W. Trexise, associate dean of the College of Engineering, and President Johnston**

**AS LONG AS ANY STEAM LOCOMOTIVES AT ALL are in regular service over the system, all supporting services for steam operation must be maintained. These include intermediate and terminal roundhouses, water towers and water treatment plants, coaling stations, cinder dumps, back shops, and all of the specialized crafts which these facilities require. Illustration shows demolition of a water tank on the G.M.&O. at Columbus, Miss.**

*performance* area, since the introduction of the Series 567 two-cycle diesel engine in 1938, the horsepower output per cylinder available for traction has been increased 33 1/3 per cent, with even greater fuel economy and the ability to burn fuel with a wider range of specifications. Also, over the same period, traction-motor improvements have increased the tractive force ratings over 25 per cent with longer life of wearing parts. This means that, if a 1938 locomotive would pull 90 loaded box cars at 30 m.p.h., the comparable 1951 locomotive will pull the same number at 40 m.p.h. When speed is not a factor, the 1951 locomotive will pull 120 loaded box cars.

In the *maintenance* area, the two hardest working parts in a diesel locomotive are the piston in the engine and the traction motor on the axle. In 1938, average piston life was between 75 and 100 thousand miles. The 1951 piston will travel between 600 thousand and 1 million miles. In 1938, the traction motors required an overhaul at 200 thousand miles and probably a complete armature rewind at 400 thousand miles in high-speed passenger service. Today the new traction motors require mileage overhaul at 300 thousand miles and probably rewinds at 1 million miles or more. These and hundreds of similar extensions of useful life and longer periods between service requirements have created millions of unaccounted dollars of savings for every railroad using our diesel power. In fact, these development savings are responsible for the remarkable manner in which repair costs have resisted the inflationary trends. (Refer to Repair Cost chart, cumulative average, all roads.)

In the *manufacturing* area the increase in production has called for the development of specialized automatic machine tools which are capable of higher volume, improved quality, and lower cost. Both improved quality and lower cost are reflected in railroad operation. A quick example of this effect is found in new locomotive prices. In 1936 the first standardized production locomotives were sold at approximately $100 per horsepower. Between 1936 and 1941 three reductions in price were made as production increased. During the war, prices were frozen till 1945. Thereafter, three increases in price were made coincident with horizontal wage increases. In 1949, a price reduction was made which prices continue to the present time. And today our prices are approximately $100 per horsepower, or roughly at the 1936 level, with an infinitely better machine capable of more and longer life, due in large measure to the development of better machines, processes, and methods incident to volume production.

The economies inherent in the dieselization of our railroads have been great enough to produce highly attractive returns on investment and a rapid trend towards complete dieselization at an early date. It is obvious from an analysis of comparative operating indicators and expenses that railroads with large fleets of diesel locomotives still have a long way to go before exhausting the economies which are attainable with diesel motive power. *The spread between the average of all roads and the performance of the best operators would yield an additional gold mine of savings if it could be closed.*

The secondary savings from the abandonment of all steam facilities have been realized to a negligible extent. This, together with the education of people in the proper operation and maintenance of diesel equipment and of management decisions which will capitalize on the full capacity of this new motive power hold the greatest promise for future improvement.

And finally, the diesel locomotive itself is undergoing constant development, refinement, and improvement. The motive power of 1951 is a vastly superior machine to the stainless-steel streamliners of the late Thirties which started the revolution in rail transportation. At Electro-Motive, more time, money, and experience are being spent on locomotive research and development today than at any time in our history. This is just another way of saying that product improvements which will produce operating and maintenance economies for the railroads will be coming along faster in the future than they have.

"The volume of acid and water sprayed on the cars should be just enough to accomplish sufficient cleansing and effective rinsing." Special problems are created by the application of mechanical scrubbers (right)

# Cleaning Can Increase Corrosion On Passenger Cars

By A. M. JOHNSEN*

In preventing corrosion on railroad passenger equipment, the maintenance activities and factors which contribute to corrosion must be regulated and closely supervised. Car cleaning is responsible for a large proportion of corrosion damage to passenger car equipment and since the attack is usually hidden, the railroad is not aware of the damage until the car is shopped. F. K. Mitchell, manager of equipment of the New York Central, has estimated that $47,330,590 was spent on repair of corrosion damage to passenger cars nationally in 1949, which is almost 30 per cent or practically one-third of the total maintenance repair cost.

The Pullman Company, for years, has been vitally concerned with the problems of general exterior car cleaning in the interest of holding down cost of repairs.

### *Car Cleaning*

The type of cleaner most generally employed for cleaning railway passenger cars is the acid type, although recently there has been some attempt to determine the possibilities of modern detergents of the alkaline type. The most generally applied finishes for the exterior of railway cars are the so-called synthetic finishes, principally of the alkyd group. These finishes are quite resistant to mild acid type cleaners of low concentration and fairly resistant to mild alkaline types.

The dirt which accumulates on railway passenger cars is principally road ballast grit, iron dust and combustion products from the locomotive, which include fine particles of carbon. The deposit is tenacious and difficult to remove with ordinary soap detergents, but responds quite well to acidic types. For these reasons, acids and acidic proprietary compounds are generally employed by the railroads at present. Some experimenting is being done employing the acid type at one terminal and alkaline type at the other terminal, so that residual cleaning fluids neutralize.

It is early to say whether this scheme will yield any benefits, since neutralization produces salts which stimulate electrochemical reactions.

In former years railway passenger car exterior cleaning was done by hand, and generally at not too frequent intervals during the year. This work was done with long-handled car scrub brushes and the detergent agent was usually oxalic acid or proprietary acidic compounds. Since the recent advent of mechanical washers, the general practice now employed is to put the trains through these washers after each trip. The frequency here varies from one to three days, depending on the distance the train travels. In this practice, the cars receive a shower bath with detergent and water sprayed under pressure over the entire train. The atomized spray and solution fog, striking the cars directly, cause acid and water to infiltrate through minute openings and into recesses in the car structure. The water and acid then are absorbed into the insulation which is absorbent fibrous material.

### *Insulation Is a Factor*

Since a limited amount of air circulates within these closed sections of a car, the wet insulation stimulates corrosion of the steel surfaces. If there is any chemical treatment given the original insulation material, the attack is intensified through chemical action of the water and acid on the ingredients of the insulation. Condensation also runs down to the side sills depositing liquid on the framing members and other surfaces which retain

This article is adapted from a paper presented at the Railroad Corrosion Conference sponsored by the International Nickel Company, Inc., at Wrightsville Beach, N. C., May 1-3.

*Engineer of tests, the Pullman Company, Chicago

liquids. When the cars are shopped for repairs, the effects of these conditions result in extensive renewals of girder sheets, framing members and other structural parts which have been attacked.

A considerable part of this structural corrosion damage is due to excessive concentration of the acid detergents, as well as undue frequency of the acid application and volume of solution in excess of that necessary to clean the cars.

In order to establish the minimum effective practice with regard to these considerations, a close check on the practice should periodically be made. Some trains operate through sections of the country and territories where dirt film accumulation on the cars is less than on trains operated through highly industrialized sections or over routes having numerous tunnels. It is desirable that individual lines determine their own minimum needs for the cleaning required to maintain clean and suitable appearing equipment, and reduce corrosion potentials from this source to a minimum. Important to this entire subject, is that effective and continuous supervision be given to the methods and control of car cleaning practices at all times. This means that the preparation and mixing of the cleaning compounds should be carefully supervised and controlled at all times.

The railroads should seek to employ only the weakest acid concentration and the minimum frequency of application to maintain clean cars. Some railroads have issued suitable instructions and make periodic checks on the acid concentration. This is important.

Laboratory control of cleaning solutions gives the foreman or supervisor of cleaning the essential control that is needed to insure that excessive acidity is not progressively increased. Excessive acidity will in addition rapidly accelerate corrosion of the cleaning equipment. It is a safe assumption that any expense added to secure this control will be more than compensated for in prolonging the life of the cars by preventing excessive corrosion. In addition it will prolong the life and appearance of the paint finish, as well as prevent waste from excessive use of the cleaners. Excessive use of cleaners is costly and in fact this has been found in instances where investigations have disclosed undue concentrations and excessive applications. The Pullman Company has available at all yard offices a printed folder describing a practical method for testing and controlling the acid strength of cleaners. These are available from the Pullman Company upon request.

### *Mechanical Scrubbers*

For terminal cleaning with mechanical scrubbers, the Pullman Company has advocated a concentration of two ounces or less of cleaner to one gallon of water. This concentration may be increased for cars receiving only occasional cleaning by hand brushing. It is suggested that, where terminal cleaning with mechanical washers is done after each trip, only water be used until there is a noticeable film of dirt present. At this time only should the acid treatment be given with the above recommended concentration. Before acid is applied, the car should be sprayed with water so that a water seal will form in minute openings, thus aiding in preventing acid infiltration to the interior and inner recesses of the car.

This prespray of water also reduces the direct attack of acid on the dry surface and lowers the temperature of the car in hot weather. Direct application of acid to hot cars is injurious to the paint finish. The volume of acid and water sprayed onto the cars should be just enough to accomplish sufficient cleansing and effective rinsing. A test can readily be performed by collecting drippings from the side of the car and checking these for acidity by using litmus paper or other suitable indicators.

Since mechanical washers are being more extensively employed for terminal cleaning, there has been a tendency in some cases to establish acid strength and procedure for an entire train, based on cleaning the head-end car. These cars usually have a heavier film of dirt and oil, being directly back of locomotives, and they are not typical of the condition of the following cars which do not get as dirty. It is suggested that consideration be given to prior hand-swabbing of head-end cars or some similar treatment, thereby aiding in maintaining lower acid concentration on the balance of the cars in the train. Careful consideration of this is earnestly recommended.

### *Recommendations*

It is strongly recommended that any railroad that has not embarked on an investigation covering the various phases of these cleaning and corrosion problems, do so, since the destructive influence of cleaners is extremely costly. This is particularly timely under existing high labor and material costs.

It is also recommended that each railroad's investigation should be thorough to search out the corrosion effects on all parts of the structure, since corrosion reactions are very rapid and any tendencies toward corrosion should be observed and corrected as soon as possible to prevent costly repairs at a later date.

We would also suggest frequent inspections of passenger-train cars for indications of corrosion. In cases where corrosion is visible, steps may be taken to prevent its spread. At every shopping of the car, care must be taken in examination of hidden parts where liquids may have penetrated either as a vapor or as liquid seepage. External parts particularly prone to corrosion are belt rail, letterboard, underside of eave mouldings, bottom of girder sheets, vestibules, vestibule doors, trap doors, end posts, general window area, window sash and hardware.

Effective supervision should be maintained on all car washing operations. Such supervision should be adequate to accomplish the following: (1) Control preparation of cleaners; (2) maintain the lowest possible concentration of acids in the storage and service tanks; (3) prescribe the least costly, least wasteful and least dangerous method of applying cleaners; (4) prescribe limits for the frequency of application of cleaning solutions to the cars; and (5) guarantee thorough rinsing with water.

Responsibility for these procedures should be delegated in such a way that effective controls are maintained and that some system of continuous inspection is insured.

The additional costs resulting from increased supervision and control will more than pay for themselves in prolonging the life of railroad equipment and decreasing costs of repairs when cars are shopped.

It has been estimated by Professor Uhlig of Massachusetts Institute of Technology that the annual cost of corrosion in the United States is $5,500,000,000. This includes cost of corrosion preventive measures as well as destruction due to corrosion. The railroads' annual cost is estimated by Mr. Mitchell[1] at $47,330,590 for passenger car corrosion damage repairs.

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[1] "Control of Corrosion Damage to Rolling Stock Through Proper Design and Maintenance." F. K. Mitchell's address before Car Department Association of St. Louis, November 28, 1950.

The ASFX test train, from left to right, consists of cars number 1948, 1941, 1946, 1940, and 1947

Left—The research staff includes representatives of the A.A.R., the journal-bearing development committee, the manufacturers' technical advisory committee, members of the A.A.R. mechanical research staff, and the American Steel Foundries' service laboratory test crew. Right—Members of the A.A.R. mechanical research staff, reading as usual from left to right, R. A. Rayer, R. E. Abbot, L. L. Olsen, and R. M. Marshall

# How the A.A.R. Studied Freight-Car Ride

***Extensive road test program evaluates the service performance of 15 unit and 11 package snubbers, 2 modified conventional and 35 high speed trucks***

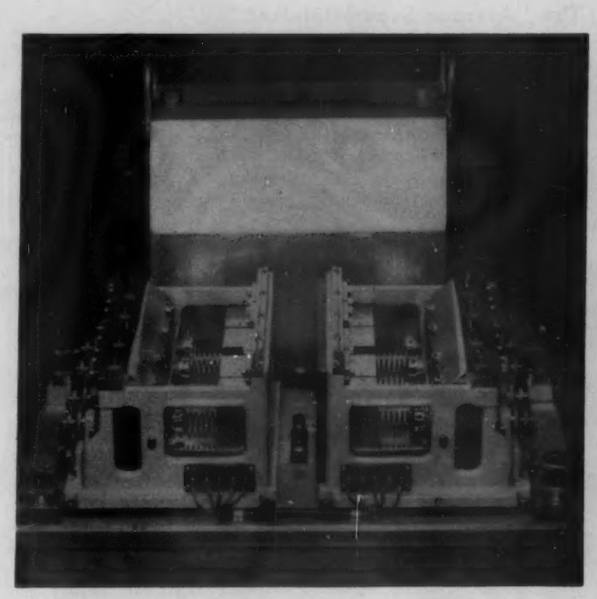
Since 1948 the Association of American Railroads has been engaged in an intensive freight-car truck and snubber research program with two ultimate objectives: (1) To improve the ride of freight cars at high speeds by determining and evaluating the relative service performance of available trucks and snubbers; and (2) to determine and evaluate the service life expectancies of those devices found to give satisfactory service performance.

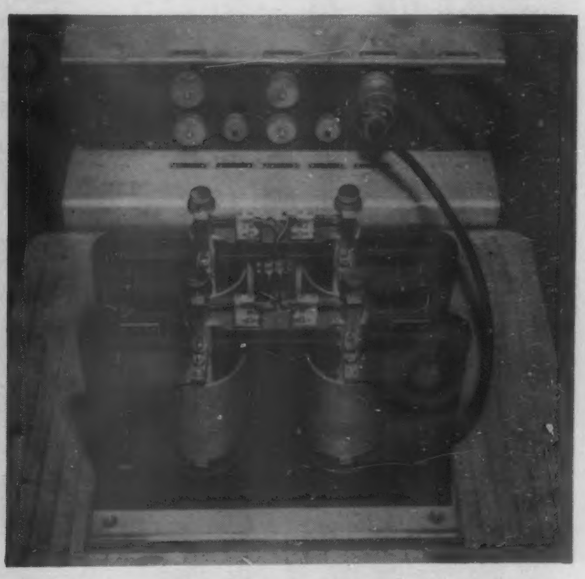
Part 1 of this program has been completed through a series of road tests on the Illinois Central between Clinton, Ill., and Gilman, and the data gathered are being incorporated in a summary report which will cover the results of road tests on all devices entered in the three-year test program. It will evaluate the service performance of each device, with sufficient background material and data, summarized and analyzed from three previously issued progress reports, to substantiate the evaluation. Part 2 of the program, evaluating the service life expectancy of the devices found satisfactory from a performance standpoint, will be covered later by laboratory investigation.

The program covered three periods, the first comprising 78 road tests run in 1948. Devices tested in 1948 were seven designs of unit-type snubbers used in combination with 1⅝-in.-travel standard bolster springs; four designs of package snubbers, replacing the conventional all-coil-spring groups; and eight special designs of high-speed trucks having built-in snubbing devices with long-travel bolster springs.

The second period, 78 tests during 1949, covered seven designs of unit-type snubbers, three designs of

Left—Varying rail loads up to 169,000 lb. were obtained by bolting steel blocks to the floor. Right—A window placed in the floor at each of the four corners of the yardstick car and the companion car permits observation of each truck





Left—Accelerometer for measuring and recording lateral impacts. Right—The type B vertical accelerometer was designed by American Steel Foundries especially for use on road runs of the test train

package snubbers, fifteen special designs of high-speed trucks, and three roller-bearing arrangements tested in high-speed pedestal-type trucks.

A final group of 45 tests were run in 1950 on one design of unit-type snubber, four designs of package snubbers, nine designs of high-speed trucks, and one roller-bearing design of high-speed truck.

All told, the devices tested during the three-year program numbered 15 unit snubbers, 11 package snubbers, two modified conventional trucks and 35 high-speed trucks.

The test train was made up of an I.C. steam locomotive and the American Steel Foundries five-car Service Laboratory, consisting of the following cars in order behind the locomotive:

ASFX 1947—Combination Baggage-Coach
ASFX 1940—Yardstick Car
ASFX 1946—Operations Center and Instrument Car
ASFX 1941—Companion Car
ASFX 1948—Combination Baggage-Coach

Car 1946 contains the master instrument boards, on

which are mounted counters which registered all accelerometer readings. A cupola is mounted on top of the car for observation of mileposts, etc. A telephone and public address system provide communication between cars. A diesel engine generating set furnishes electrical power for all cars.

Cars 1940 and 1941 were standard 50-ton, steel-sheathed box cars, identical in design, and suitably fitted with doors, observation windows, etc. Four windows were provided in the floor of each car so that the trucks could be observed while the train was in motion. The trucks under both cars were equipped with passenger-type axles with standard A.A.R. 5½in. by 10-in. journals. All wheels were wrought steel, with A.A.R. 1 in 20 taper conical treads, and were kept in the same relative position under the cars throughout the tests.

Car 1940 was equipped with A.S.F. A-3 Ride Control trucks with 2½-in. travel springs. These trucks remained under this car throughout the test program. Various lading weights were obtained by loading steel blocks into cars 1940 and 1941, and securely bolting them to the car floors. The rail loads varied from 60,000 lb. to 169,000 lb.

The track and roadbed were representative of good average main line, well ballasted and fully tie-plated. All rail was of 112 lb. section, laid on treated ties. Ballast for approximately 60 per cent of the track mileage consisted of chatts; the remainder was broken stone and slag.

Instrumentation comprised vertical and lateral type accelerometers which indicate and record impacts of each of several degrees of intensity for these two directions. The intensity of the impacts is measured in terms of gravity, referred to as G. An impact of one G indicates an acceleration of the car body equal to that of gravity, 0.25G an acceleration of one fourth that of gravity, etc.

Vertical impacts of .25G, .50G, .75G and 1.25G were recorded for the low-speed runs; for the high speed runs, values of .25G, .35G, .50G, and .75G were recorded. The lateral accelerometers recorded impacts of .2G, .4G, .6G and .8G for both schedules.

It was recognized that it is impossible to duplicate with a high enough degree of accuracy one day's road test with that of any other because of varying conditions of the roadbed and changing operating conditions, making it impossible to repeat any exact schedule or test as previously run. The inclusion of the yardstick car overcame this handicap by providing a consistent basis for evaluation of the data on successive tests. This car was equipped with a set of modern trucks which were not altered during the entire program, and the car was maintained in a stable mechanical condition.

In this way the ride of the companion car—which was successively equipped with each device to be tested—was compared with that of the yardstick car, with both cars being subjected to equal conditions of track, speed and weather conditions. Data on the yardstick car were taken simultaneously with data on the companion car on which truck variations were made. A lading damage index (L.D.I.) ratio could thereby be computed to compare the rides of the two cars. Comparison of the L.D.I. ratios of the companion car with the different devices under test then gives a true indication of the value of each in improving the ride.

The lading-damage index from which the ratio is computed is arrived at by totaling the number of each magnitude of impact and multiplying it by a conversion factor. For example, the sum of vertical impacts of .25G magnitude is multiplied by 1, those of .50G by 4, those of 1.25G by 25; similar conversion factors are used for lateral impacts, ranging from a factor of 1 for .2G to 16 for .8G. Totaling the sums of the conversion factor multiplications for the vertical and the lateral impacts gives the lading-damage index in each of these directions. The L.D.I. ratio in either direction is then arrived at by dividing the companion car L.D.I. by the L.D.I. of the yardstick car, all L.D.'s being of course from the same test run. An L.D.I. ratio of less than one indicates a better ride than the yardstick car.

The two test cars were tested under three different load conditions—light, with a rail load of 60,000 lb.; 85 per cent of capacity, with a rail load of 145,000 lb.; and full load (load limit) of 169,000 lb.

Two basic speed schedules were run. The low-speed schedule was used for preliminary and calibration tests, for unit snubber tests, and for full-load tests. The high-speed schedule was run on the light-load and 85-per cent load tests with the package snubbers and high-speed trucks.

Both tests were run with speed increases in increments of 5 m.p.h., with distances varying from 7.1 to 10 miles at each speed range, from 30 to 90 m.p.h.

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# Communication . . .

## The "Average Superintendent"

WASHINGTON, D. C.

TO THE EDITOR:

Referring to the editorial in the *Railway Age* of April 23, 1951, under the caption, "How Describe the 'Average Superintendent'"—and accepting the suggestion that superintendents, past, present and future, submit their opinions on this highly important subject, I offer the following as from a "Has Been."

The object of the editorial, of course, is to bring out practical suggestions for use in developing and appointing men as superintendents, (1) who are capable of assuming the responsibility, (2) who may be expected to grow, and (3) who have reasonable expectancy of a maximum span of efficiency.

It is not clear that the establishment of an average age can be helpful in this, or that either a minimum or maximum has value as a determinant in the matter. Both are variables which may be affected by promotions and retirement at the top, or death along the way. Maturity of judgment is not attained at any specific age, and the provisions of the Railroad Retirement Act now largely solve any problem of superannuation.

As for educational qualifications, the fact that only 25 per cent of the superintendents included in the study are college men would seem to indicate that the ladder by means of which "the average superintendent" comes up is not attractive to college-bred men, or that qualified trainmasters, chief train dispatchers, and others already in service, are sufficient in numbers to offer opportunity for satisfactory selection on the railroads.

This selection is a responsibility of management, and the choice usually is made upon a basis of experience, record and qualifications. This being true, a formula might prove to be a hindrance.

The foregoing is based upon wide acquaintance with superintendents of an earlier day. They came up through various channels, and it could not be said that any particular line of experience had produced the best superintendents. Boiled down, it was a matter of individual ability. "How describe the average superintendent?"—The operating officer whose lengthened shadow determines the success of a division.

EDWARD H. DEGROOT, JR.
Attorney

## A Year's Review of Improvements in

# Motive Power and Rolling Stock Products

### Steel-Wood Flooring

Said to combine the advantages of wood and steel is a new type of freight car flooring which offers greater strength and longer life for use in box cars, gondolas and flat cars. According to the Armco Steel Corporation, Middletown, Ohio, its manufacturer, bulk lading can be mechanically unloaded without damage to the flooring, yet bracing can be nailed to the wood planks. Due to the strength of the flooring, it reportedly will not sag under concentrated loads and will not break under heavy loads up to 10,000 lb. imposed by lift trucks and palletized lading.

### Snubber Spring

Refinements have been made in the design of the volute snubber spring made by the Holland Company, Chicago. The company's latest unit, style A-7-A is said to have increased shock-absorbing ability and effective life. These results were accomplished by improved surface and depth hardness of spring material and compensation for surface wear by means of elastic pressures on inner coils confined within an elastically yielding outer coil.

The principle of the snubber is a volute spring coiled tightly under pressure so that the spring turns rub on each other and act to damp out vertical resonant action of bolster truck springs.

### Aluminum Rivet

A rivet developed by the Aluminum Company of America, New York, is reported to have an average shear strength of 38,000 p.s.i. within two weeks after driving. Because of the high strength of the rivet, it can be used instead of steel units in aluminum structures such as railroad cars. Rivets are available in ½-, ⅝-, ⅞- and 1-in. sizes. When heated, all units except the 1-in. size can be driven with a hand-operated pneumatic hammer.

### Truck Lubricator

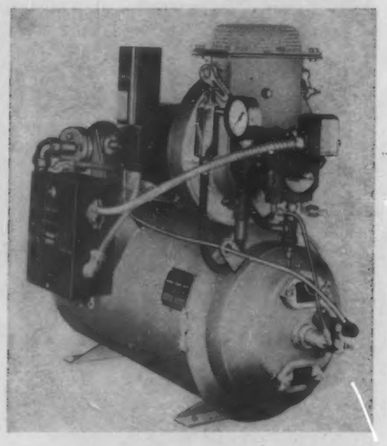
The Type PC lubricator has been designed to permit lubrication of diesel locomotive trucks, particularly of flanges, center plate, spring bearings and other low pressure points.

This device, developed by the Nathan Manufacturing Company, New York, consists of a welded-steel box which functions as a housing for seven individual pumping units and as a reservoir for the oil. These pumping units are connected by piping to those spots requiring lubrication. They are operated by the vertical motion between the truck frame and the journal box.

### Plug Retainer

A journal box dust guard plug retainer that holds plugs in place in spite of severe service conditions has been made available by the Gustin Bacon Manufacturing Company, Kansas City, Mo.

Manufactured of spring steel, it is said to afford positive protection and locking to both sides of the dust guard well. The retainer can be applied without disassembly of the journal.



### Diesel Heater

A compact diesel-fuel burning hot water heater for preventing freezing of diesel switching locomotives during standby hours is now available. The unit is said to deliver 150,000 B.t.u. of heat per hr. on 1½ gal. of fuel.

As a booster heater on self-propelled diesel passenger trains, the aquastat

control causes the heater to fire up as needed to keep the water in the storage tank, engine block and radiator system at the desired setting, usually on at 160 deg. and off at 180. The entire unit weighs only 225 lb. It is manufactured by the Vapor Heating Corporation, Chicago.

●

### Plated Conduit

Cadmium plating of metal-to-metal and metal-to-asbestos gasket parts of 2½-in. flexible metallic conduits to cut corrosion on bearings parts is now being performed by the Vapor Heating Corporation, Chicago. Plating is said to give a longer steam-tight life to the gaskets.

●

### Railway Car Undercoating

A black, reclaimed-rubber base, fire retardant undercoating for passenger and freight cars has been announced by the Minnesota Mining & Manufacturing Company, Detroit 2, Mich. This EC 1141 coating is said to retard fire from sparks and heat generated by metal brake shoes. Its primary functions are to protect metal underbodies against corrosion, and to resist abrasion caused by stone and gravel thrown up from the roadbed.

Sprayed to a ⅛-in. thickness, it dries in about 48 hours to form a tough film. In addition, the manufacturer states it resists water, weathering, salt water and other corrosive agents.

### Journal Box Lid

A journal box lid that can be attached or removed quickly without the use of tools and certified by the A.A.R. to specification M-120-47 has been made available by the Motor Wheel Corporation, Lansing, Mich. The unit, which is made of pressed steel, opens to 120 deg. for easy access to the journal.

Center construction is said to permit full articulation up, down, right or left. The lid is made in standard and deep flange models and provides protection from wind currents carrying foreign matter and moisture.

●

### Brake Converter Unit

Available for modifying standard Ajax No. 1 hand brakes into stand-still wheel types is a conversion kit announced by the Ajax-Consolidated Company, Chicago. The conversion unit which is furnished on specification to those railroads desiring the stand-still feature, does not make present installations obsolete.

●

### Fuel Injection Pump

A double disc pump, the Model DD, enables unit replacement of the fuel pressure pumps, distributor discs, and governor assembly without removal of pump from its engine.

The device is offered as standard equipment on the 300-hp. NHRS-600 and 275-hp. model NHS-600 diesels by its manufacturer, the Cummins Engine Company, Columbus, Ind. This pump is said to be 65 per cent lighter and 56 per cent smaller than previous models.

●

### Indicating Pyrometer

Designed for checking diesel engine exhaust temperatures is a combined indicating millivoltmeter pyrometer and rotary switch recently introduced by the Industrial Division, Minneapolis-Honeywell Regulator Company, Philadelphia, Pa.

These units can be furnished for surface mounting, interchangeable for bottom or back connection with conduit. Large contact rotary switches with 6, 12 or 24 points are offered.

In place of internal connections, the instrument is complete with 20 in. of lead wire extending to it from each switch point.

●

### Air Grill

Suitable for train air-conditioning systems is the Uni-Flo Voladjuster, a combination grill and volume adjuster made by the Barber-Colman Company, Rockford, Ill. Air volume is regulated by a damper behind the supply grill and positioned by a wall-mounted adjusting dial. A pointer on the knob indicates all damper positions from open to closed through a stainless steel wire operating in a flexible protecting sheath.

●

### Airchime Whistles

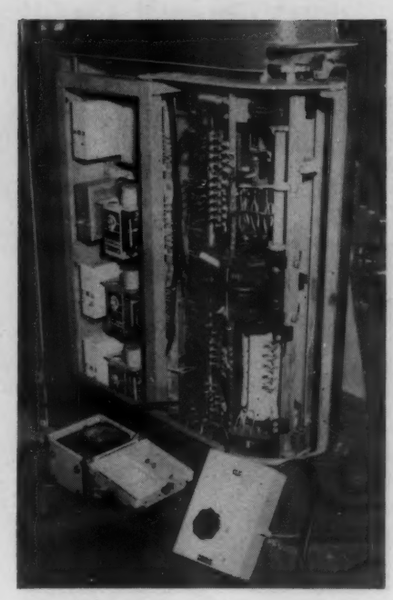
Single-, three- and five-tone combinations of whistles, introduced for railroad use, have been made available by the Nathan Manufacturing Company, New York. Basically, the whistle is a musical instrument, each horn of which emits a single tone of predetermined pitch or frequency. Tone is produced by a circular reed which is vibrated by compressed air to propagate sound waves.

The whistle produces full sound intensity at an air pressure of 100 lb. per sq. in. This intensity can be modulated for terminal or suburban service.

### Hinge and Lock

Designed for all drop-bottom cars of the gondola type, spring hinges are said to make possible one-man closure of heaviest doors while the adjustable locks assure uniform door fit despite any irregularities.

This combination, made by the Wine Railway Appliance Company, Toledo, Ohio, maintains individual door operation to suit all lading and unloading operations. An eccentric is located in the base of the latch and allows uniform adjustment between doors and floor of the car.



## Locomotive Tester

A portable axle-generator drive unit and a portable tachometer-frequency indicator for testing speed-sensitive locomotive devices has been announced by the General Electric Company, Schenectady, N. Y.

The equipment aids in accurate setting of automatic-transition relays and overspeed relays and checks accuracy of speedometers and sequence of contactors and speed-sensitive relays. A dual-purpose instrument, the indicator also shows engine speed by reading output of engine tachometers. It is adaptable for both new and old locomotives.

●

## Locomotive Shutter

Shutters designed for severe service on diesel locomotives and switchers have been made available by the Industrial Division, Minneapolis-Honeywell Regulator Company, Philadelphia, Pa. A part of Honeywell's engine temperature control system, they can be installed on existing or new locomotives.

The design is said to create a tight closure, with air leakage eliminated at full-closed position. Its frame is constructed so as to shed water away from the bearings and prevents freezing during cold weather.

●

## Corrosion-Proof Paint

Developed originally to protect aluminum, a paint has been made available to resist action of acids which may accumulate outside storage batteries. Its manufacturer, the Electric Storage Battery Company, Philadelphia, Pa., states that the product will dispose of the steel battery tray corrosion problem, particularly for larger industrial batteries, some of which weigh up to three tons.

The new paint is said to form a bond to the steel tray that enables it to withstand chemical corrosion and mechanical abuse from blows without flaking off.

## B-X Type Truck

A new four-wheel B-X type truck for commodity cars operating in passenger train service has been developed to meet the demand for a rugged, lightweight truck for box-express service.

The one-piece cast-steel frame with cross transoms and integral pedestals is said to hold the axles in tram at all times. It is manufactured by the General Steel Castings Corporation, Granite City, Ill. The steel bolster is supported on swing hangers, providing lateral control. The truck is also arranged for locking center pin.

●

## Corrosion-Resistant Paint

An alkali-resistant vinylite resin finish has been produced by the Sherwin-Williams Company, Cleveland, Ohio, in conjunction with the Bakelite Division, Union Carbide & Carbon Corporation, New York.

Hopper cars painted with the finish have carried cement and soda ash and are reported after three years to have remained almost free of corrosion, even where sledge hammers had been used to break the cargo loose.

The finish is recommended for use on hopper cars, tank cars, refrigerator cars and other equipment subject to similar rigorous service conditions. It is easy to apply.

●

## Diesel Couplings

Two couplings for supplying diesel locomotives with oil or water have been developed by the Railroad Products Company, Cincinnati, Ohio. Each

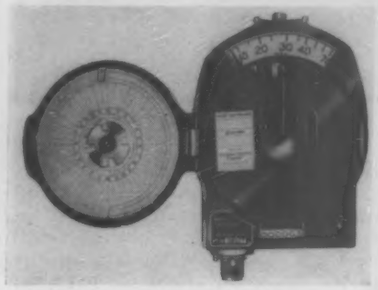
## Lading Band Anchor

Developed recently is a band anchor designed to provide continuous loop locations for anchorage of lading and to serve as a horizontal replacement for tops of open car sides. This anchor can be welded to the top coping of the car. It is available from the Wine Railway Appliance Company, Toledo, Ohio. It will accommodate bands or wires and has no sharp corners to sever the anchorage.

coupling consists of a coupling head, a gasket and a tail section to which the supply hose is attached.

The tail section of each unit forms a smooth passageway for the liquid and swivels freely inside the head, preventing twisting of the supply hose. Couplings are cast from an aluminum alloy.

●



## Locomotive Recorder

A switch engine recorder has been made available. It has a chart which serves as a permanent record, an illuminated speedometer, a clock and a mileage indicator.

This recorder made by the Barco Manufacturing Company, Chicago, is adaptable to all types of locomotives, both steam and diesel, and can readily be applied without major alterations. Both dial and chart are calibrated from 0 to 70 m.p.h.

The driving mechanism is available in both friction-drive and axle-drive units. The former is recommended where it can be applied without interference.

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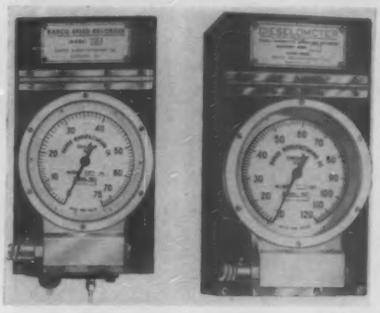

## Speed Indicators, Recorders

Redesigned models of diesel locomotive speed recorders, speed indicators and engine operation recorders, now incorporating built-in lighting which replaces external bracket type lights, have been announced by the Barco Manufacturing Company, Chicago. No change has been made in the basic mechanism of the instruments which are offered in two speed ranges, 0 to 75 m.p.h. and 10 to 120 m.p.h. An optional feature offered with the operations recorder or Dieselometer is the recording of dynamic braking and wheel slippage.

●

## Thermocouples

Recently introduced is a series of diesel engine thermocouples equipped with steel protecting tubes and designed for measuring cylinder exhaust temperatures. Developing a large electromotive-force, the units are said to be built to withstand severe vibration and corrosive conditions.

Available from the Industrial Division, Minneapolis-Honeywell Regulator Company, Philadelphia, Pa., their terminal blocks are molded from heat-resistant insulating material with raised characters for permanent identification of type and polarity of thermocouples.

●

## Wheel Protection

The American Brake Shoe Company, New York, has developed a device applied to diesel-electric locomotives to prevent damage from spinning, sliding or locking of wheels. It detects spin promptly at all speeds and provides a circuit which can be used for correction; it detects slippage or sliding during braking operations and closes a warning circuit; it gives a continuous warning if a wheel becomes locked, a fuse fails or if the device is inadvertently shut off. A relay panel in the locomotive cab coordinates the output of rotary switches, one on each axle.

●

## Cleaning Hose

A rubber hose made for carrying hot oil and water used to clean locomotives has been made available by the Lee Rubber & Tire Corp., Youngstown, Ohio. The product has an inside diameter of ¾ in. and is manufactured in 50 ft. lengths.

Made of Reprene, the cover is said to resist oil, hot water, abrasion and sunlight. The tube is reinforced by three braids of cord to withstand a bursting pressure of 1,000 p.s.i.

●

## Air Horn

Known as the Chime Tone, this horn is of cast aluminum construction and is provided with a plastic diaphragm. Manufactured by the Leslie Company, Lyndhurst, N. J., the unit is available with 2, 3, 4 or 5 notes. Chords, of which a choice is offered, provide high decibel output with low power consumption. Modulated blasts can be used passing through towns. The mounting for the new horn is interchangeable with present Leslie horns, making replacement simple.

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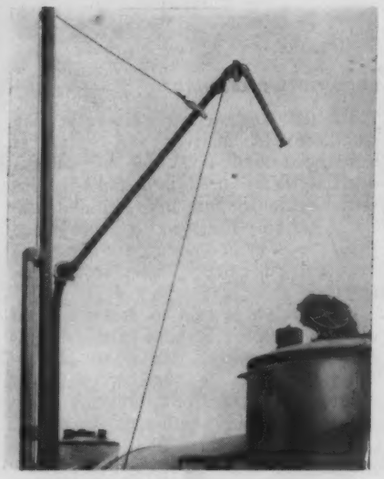
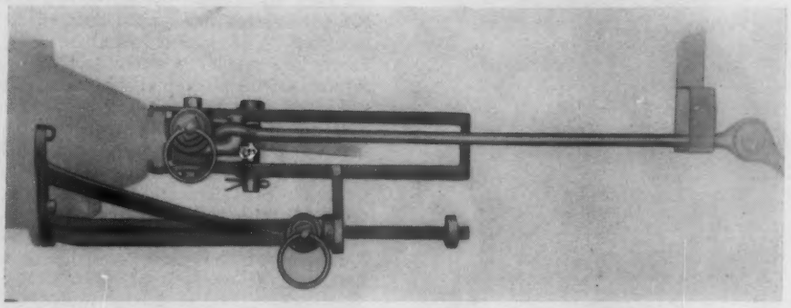


## Tank Car Unloader

An arrangement of pipes and connections for unloading tank cars through the dome has been developed. It permits flexibility in operation and has no lining to rot and get into fuel lines. This connection, made by the Barco Manufacturing Company, Chicago, is attached through the dome to the pipe going to the bottom of the tank car.

## What's New in Devices

# For Cars and Locomotives



### Adjusts Brake Slack Automatically

A simplified automatic brake slack adjuster for freight cars has recently been announced by the Locomotive Finished Material Company, Atchison, Kan. It is designed to take up the slack caused by brake shoe wear by lengthening the push rod in the air cylinder automatically. The outstanding feature, according to the manufacturer, is its unusual simplicity of design, installation and operation. It is completely automatic, positive acting, with no manual adjustments throughout the life of the brake shoes.

When shoes become worn, the carman merely pulls the two release rings which returns the spring-operated adjuster to its original position, thus eliminating the danger of climbing under cars to make manual adjustments. Even if all shoes should become fully worn down, or fall off, this new adjuster will stop the car by maintaining proper braking force on the brake head, the manufacturer says. One man can apply the slack adjuster in a short time without special equipment or drilling of holes, and no further servicing is required.

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### Battery-Less Car Lighting System

A method of operating car lighting systems offered by the Waukesha Motor Company, Waukesha, Wis., eliminates the conventional 400-1,000 ampere-hour car lighting battery. The method employs only an ordinary automotive-type battery — five 6-volt units in series on a 32-volt system, or five 12-volt units on a 64-volt system — to start the Enginator (Waukesha trade name for an engine-generator system) and activate the controls.

The battery-less d.c. Enginator was inspired by the reliable and satisfactory operation of a.c. Enginators, which, because no car lighting battery can float on the a.c. lines, must supply the complete electric requirements for each car by operating continuously.

Attracted by the possibility of saving several thousand dollars per car in capital investment and annual maintenance charges by substituting the small automotive type battery for the large car lighting battery and, in addition, saving the under-car space and dead weight of the larger battery, one major railroad has given the Waukesha B-L (battery-less) system a six-month winter's trial this past year, on a daily run between Chicago and Denver. As a result of this experience 20 more cars of this road will be changed over to the Waukesha B-L system this year.

The equipment employs the Standard Waukesha 7½-kw. d.c. propane Enginator either 32-volt or 64-volt, or the 25-kw. d.c. diesel Enginator, also 32- or 64-volt, a simple automatic battery charging panel to maintain the small starting and control circuit batteries, and another control panel for continuous Enginator operation.

The Waukesha B-L system with controls is being offered for either new car installation or for converting existing installations.

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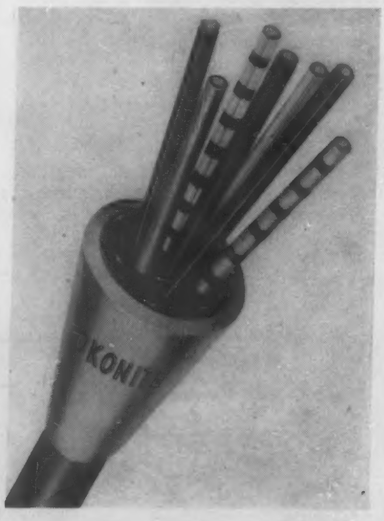
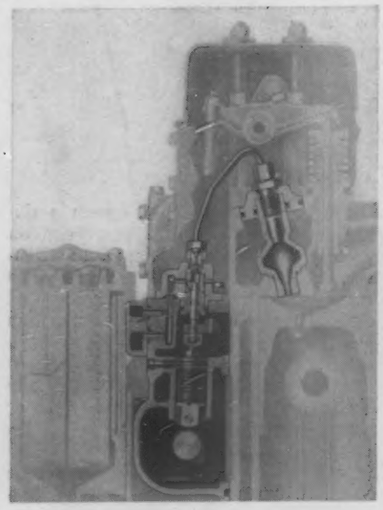



### Waterproof End Seal

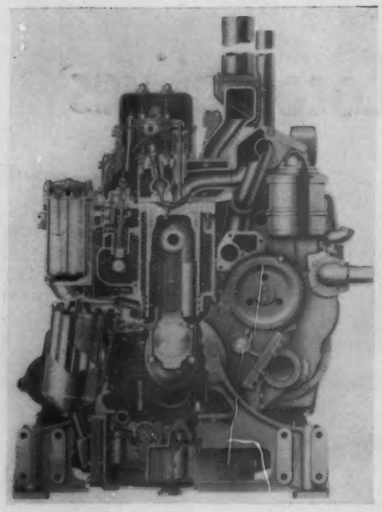
A moisture seal for terminating multiconductor sheathed cables is offered by the Okonite Company, Passaic, N. J. Cone-shaped to receive filling compound, this device is easily slipped over the cable and eliminates friction tape or makeshift windings.

Applicable to cable diameters from ¾ to 2 in., the Okonite End Seal snugly fits over the cable sheath, preventing compound leakage. The compound hardens to form a neat, permanent, moisture-proof seal and keeps the conductors properly spaced.

This seal is said to be mechanically strong and to afford long-time resistance to sunlight, air, ozone, oils and chemicals.



Cutaway view



Cross section

## Diesel Engines with New Piston Cooling System

Two new Caterpillar industrial diesel engines, the D337 and D326, are scheduled for production soon. The six-cylinder D337 engine is an industrial version of the 5⅛ in. by 6 in. engine developed for tractors, while the D326, similar in design, has a lower horsepower range.

One feature of the two models is the practice of mounting fuel pumps adjacent to the cylinders they serve. This results in standard, identical, short fuel lines for each cylinder.

Oil-cooled pistons on both models have an iron band cast integrally for the upper ring, and are cooled by an oil stream sprayed from a nozzle solidly attached to the engine block. Since this spray lubricates the piston pin, as well as cooling the piston, oil grooves are not required in the connecting rod.

Fine filtration elements which handle the full flow of oil to the engine system are incorporated in both engines. Oil passageways are protected from dirt and foreign material falling into them while filter elements are being changed, and sludge collects where it cannot enter the oil passageways or relief valves.

Horsepower ratings for the new engines (without fans) are for the D337 and the D326, respectively, 275 and 186 peak; 250 and 171 intermittent; 180 and 125 rated; and 170 and 118 hp. continuous.

## 700 Watt Dynamotor

Electrical isolation of the braking circuit from the main power line is provided through a new 700-watt dynamotor recently introduced by the Safety Car Heating & Lighting Co., New Haven, Conn. With this device, the braking circuit is independent of any grounds which may occur on the primary source.

Output voltage of the device is increased approximately 2 volts above any input value. At the lower values of voltage encountered on diesel power operation, the slightly higher voltage in the braking circuit is said to insure better and safer magnet valve operation.

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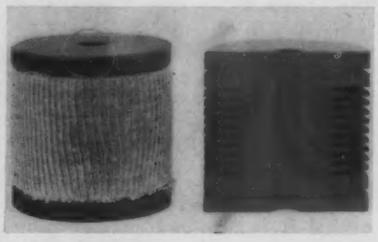

## Cellulose Oil Filter

An oil filter, using molded cellulose fibers as the cleansing medium, has been developed by the Briggs Filtration Company, Washington, D. C. Complete filters and replacement cartridges are available for standard makes of automobile, truck and heavy stationary and mobile equipment.

A bonding agent is applied to natural cellulose materials which are formed, under pressure, into cartridges of blocks. The size of fibers controls the porosity of the block. These blocks are then stabilized by a series of thermal processes which fix the finished dimensions. Cartridge blocks are rendered impervious to water and therefore retain their original dimensions in use.

Reports from users indicate, according to the manufacturer, that this medium has an exceptionally high dirt retention capacity, and that there is no "unloading" action between filtration cycles. The overall efficiency and long life of the filter are therefore described as exceptional.

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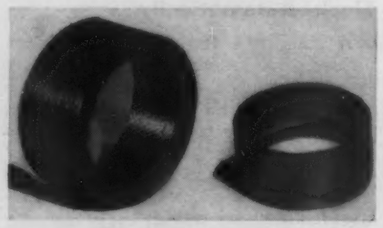

## Conduit Joint Gasket

A gasket for vapor steam conduit joints on steam hose has been introduced for railroad service applications by Pilot Packing Company, Sea Cliff, N. Y.

This gasket is manufactured from asbestos fabrics combined with high heat resistant compounds molded with close tolerances to conform with contour of the nose piece and gasket cavity of the joint.

The manufacturer states that under high-pressure steam heat and steam jet air conditioning, tests indicate longer life because the gasket will not vulcanize into the cavity, thus maintaining joint in better condition and reducing overhauling costs. Steam generation costs are thereby reduced by less steam loss through leakage.

Identified as style No. 1315, these gaskets are available in 2 and 2½ in. sizes.

●

## Automatic Slack Adjuster

The Gustin-Bacon automatic slack adjuster was designed and developed, according to the manufacturer, to maintain the desired brake cylinder piston travel on freight cars (except hopper cars) with the least possible alteration to the foundation brake rigging, and at the same time, be easy to install, simple and safe to release when necessary to apply new shoes,

and sturdy enough to run from one cleaning period to the next without special attention.

No additional material is required when applying these automatic slack adjusters to new cars, it is stated. The assembly is bolted to the non-pressure head of the brake cylinder and connected to the hand brake pull rod clevis. Total weight of the complete assembly is 80 lb.

To reset the G-B automatic slack adjuster only one operation is required — pull the operating handle toward the brake cylinder to full release position. The indexing ratchet and the master ratchet automatically reset themselves. There is no need for the car men to go between the rails or lie down, or sit down underneath the car. There is no readjustment whatever to be made between periodical cylinder cleaning dates. The possibility of short piston travel is practically eliminated because it would be very difficult, if not impossible, to make repairs without resetting the adjuster.

The G-B automatic slack adjuster is designed for a location that is in full view of car men. It is readily accessible, and is kept clean of dirt because of its "wide open" construction, and because no lubrication is required or desired. When brakes are first applied, after the original setting, the slack adjuster indexes on the master ratchet, taking up all accrued slack. Upon the next application it readjusts to predetermined piston travel in one stroke. Only one application of the brakes is required to take up all slack. If for any reason the slack adjuster should fail, the brake system merely reverts to the normal braking operation without benefit of the automatic take-up.

This automatic slack adjuster is a product of Gustin-Bacon Manufacturing Company, Kansas City, Mo.

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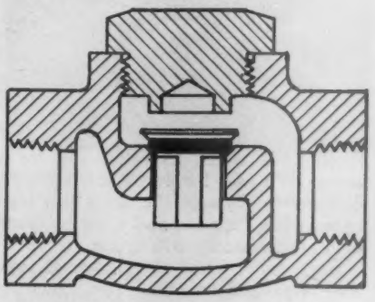


## Two Diesel Locomotive Valves

For operating air horns where conditions require the selection of a modulated blast or full blast the Viloco Railway Equipment Company, Chicago has introduced Type 1090 Air Horn Operating Valve which will permit this control by a single lever. At the initial movement of the lever, the center seat is raised, permitting air pressure to pass through a small outlet opening to the air horn, producing a modulated blast. For full blast, added force on the lever raises a large seat, opening the valve to full area.

This valve will operate any type of air horn, single or multiple tone, and provides selective control with only one operating lever. The valve cage can be removed without disturbing the valve body. The Viloco single valve No. 1056 can be converted to modulated control by replacing the internal parts of the 1056 with those of Type 1090.

The second new Viloco device is a check valve for air systems in the ¼, ⅜ and ½ in. sizes, which is claimed to be absolutely bubble tight and to retain air pressure indefinitely in the service of retaining pressure to permit reversing of diesel engines. The "O" ring seat is capable of withstanding a hydraulic pressure test of 2,000 p.s.i., and the valve has been subjected to 140,000 operations under air pressure test without injury to the synthetic rubber ring seat.

●

## Flexible Metal Tubing

A handy hookup for car heating applications has been introduced by the American Brass Company, American Metal Hose Branch, Waterbury, Conn., employing flexible metal tubing complete with fittings.

The product is described as easy to connect and disconnect as it replaces heavy, cumbersome, leaky swing joints which require packing and frequent maintenance. The tubing can be used to convey steam from 125 to 150 lb. per sq. in. pressure from heating connections to railroad cars lying over for temporary stay, loading or changing locomotives.

Ease of connection and non-corrosive properties of the casing afford protection against abrasion, adding to strength and long life. The whole assembly is said to be constructed to withstand inclement weather, lightweight, extremely flexible, and leakproof throughout to provide against loss of steam.

## Silastic Tape Motor Insulation

According to its manufacturer, easy-to-apply Silastic Tape, Type R, vulcanizes to form a continuous void-free jacket that is moisture proof, stable and resilient at top Class H operating temperatures (180 deg. C.), as well as highly resistant to oil and to both mechanical and electrical fatigue. Over 4,200 main and interpole field coils insulated with Silastic Tape, Type R, are now in service on diesel-electric traction motors.

Many of these coils have been in service for more than 15 months with no failures reported even in the case of one locomotive that was suddenly thrown into reverse by a short circuited control panel. The cost is comparable to Class B coils; life expectancy is in the range of 10 to 1.

Silastic tape is manufactured by Dow Corning Corporation, Midland, Mich.

**Left—Strainer basket of full flow lube oil strainer. Right—Cellulose disc type filter recharge**

## Lubricating Oil Strainers and Filters

Wm. W. Nugent & Co., Chicago, has recently brought out two new products for the lubrication system of locomotive diesel engines. The first is a full-flow lubricating oil strainer, which has a capacity for the entire output of the engine lubricating oil pump; all oil pumped to the engine must pass through this strainer. Because of the dirt in the oil being retained in the strainer basket, the strainer is easily cleaned, normally when the oil filters are cleaned.

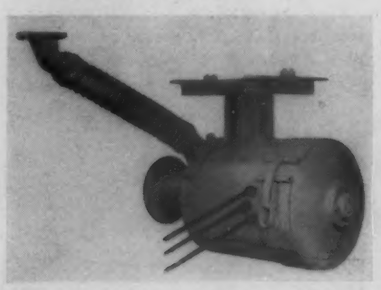
The second product, a cellulose disc type filter recharge, was developed because of the scarcity and high price of long strand white cotton waste for lubricating oil and fuel oil filtering. These recharges will fit Nugent fuel and lubricant filters now in service on diesel locomotives. The present cotton waste type filter is converted to the cellulose disc type by removing the present cartridge containing the cotton waste recharge from the filter shell and replacing it with the new cartridge.

Because of the large amount of filtering area of the cellulose disc recharge, the service life is reported to be four to five times that of the cotton waste recharge.

●

## Caboose Power Supply

A lightweight and easily maintained generator which is said to meet requirements for radio power supply equipment for caboose installations has been developed. For use with a nominal 12-volt storage battery, the unit, made by the Safety Car Heating & Lighting Co., New Haven, Conn., is



rated 1,000 watts, 15 volts; and for a nominal 6-volt battery, the rating is 850 watts, 7½ volts. It has a full load speed of 500 r.p.m., and a cut-in speed of approximately 375 r.p.m.

Suspension is of the universal type and arranged so that the armature pulley can be placed on the center line of the car. It can be applied to existing cars with only minor changes in the underframe. Alinement of generator with car axle is said to be easily accomplished and suspension provides constant belt tension.

The generator regulator is a modification of standard models and method of adjustment and type of control are identical with those of the standard car lighting generator regulator. It is mounted on a steel panel. The reverse current relay is mounted on the regulator panel.

The regulator can be supplied with a standard black enamel cover, by the use of which the car electrical locker can, it is stated, be dispensed with, saving considerable initial installation cost.

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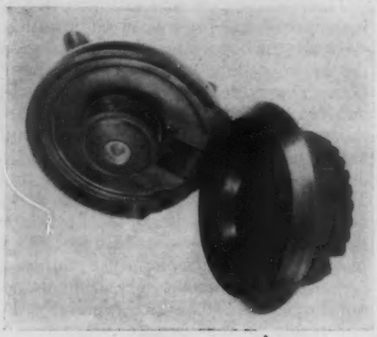
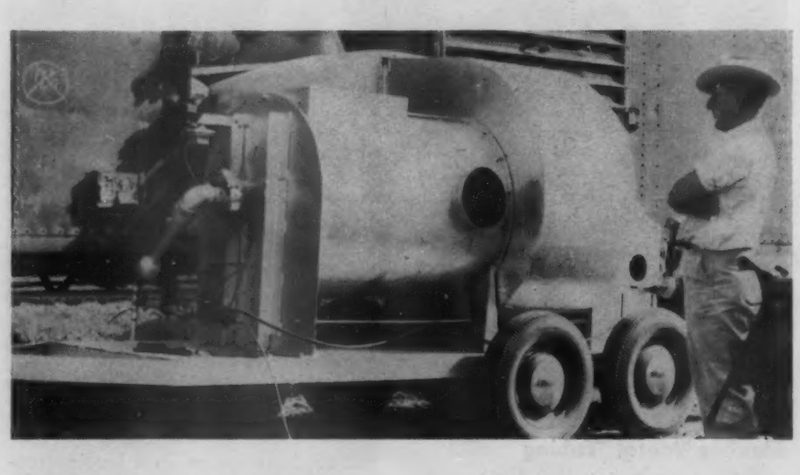


## Hinged Vent Cap

A self-closing vent cap designed for car lighting and air conditioning batteries has been made available by Gould-National Batteries, Inc., Trenton, N. J. This hinged device is said to keep battery tops dry, prevent the escape of electrolyte from the cell and eliminate subsequent damage to the battery and its compartments.

On the underside of the cap section is a flexible neoprene baffle which fits snugly into the filling opening of the adapter, making a tight seal. When



## Portable Dryer and Heater

For such diverse applications as thawing, preheating, and drying of agricultural, industrial and other products carried in railroad cars, the Southwest Industrial Heating Engineers, Dallas, Tex., has introduced the Farm-Mor Portable Dryer and Heater. Other uses of the unit include supplying a source of heat for emergency crews working in subfreezing weather and under other difficult conditions.

These units are manufactured in three sizes, either trailer- or skid-mounted, and come with complete temperature controls and 100 per cent safety devices to shut off all fuel in event of mechanical or flame failure.

Standard models delivering heated air at temperatures up to 200 deg. F. and in capacities up to 23,000 cu. ft. per min. are available.

the cap is closed, it automatically latches, preventing cap from opening when electrolyte in the cell surges or when batteries are hosed down with air or water. According to the manufacturer, vertical shock and vibration will not open it, yet the cap is easy to open in order to service the cells. A flip of the finger under the cap handle is all that is required.

This vent cap has a condenser chamber between the baffle and the underside of the cap. Gas passes into this chamber where it is condensed and the moisture passes back into the cell. The adapter flange of the cap is designed for use in all cell covers having the 3¼-in. diameter threadless vent opening.

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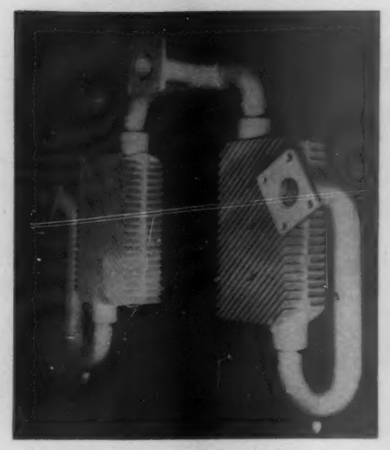
## Flooring For Box Cars

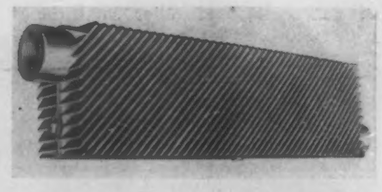
A recently developed nailable flooring, made of oxychloride cement and called Plastinail, is now being used as a method of renovating worn box car floors. A feature of the flooring is that blocking nails may be applied in any location and readily withdrawn with little or no chipping of the material. The following advantages are claimed for this new flooring material: It does not require any change in floor design; is easily applied and can be placed in service 48 hours after setting; is flexible and light in weight; will not splinter; increases floor compressive and transverse strength in some instances over 100 per cent; is permanently smooth, minimizing damage to lading; prevents leakage of bulk materials; is fire and spark proof; is resistant to oils and greases and easy to clean; is not affected by heat or cold; and promotes long floor life with minimum out-of-service time.

The installation of Plastinail flooring is accomplished by first covering the old floor of the box car with 15-lb. asphalt-saturated felt paper. This provides a separation for independent expansion between the old wood and the new Plastinail floor. No. 16 gage, 2-in. sq. mesh reinforcing wire mesh is then nailed over the paper. Retaining strips are fastened in the doorways of the car. A wet mix of Plastinail is prepared and troweled into the wire mesh to a thickness of 1 in. and then smoothed level. Additional trowelings are given the floor to obtain the desired smoothness. Plastinail may also be applied in the same manner, ⅜ in. thick, to the insides and ends of box cars to reinforce the interiors and give a smooth surface for handling bulk shipments without danger of damage or possible infestation.

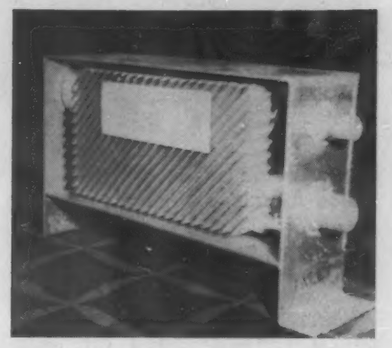
The first Plastinail floors were applied in June 1947, and test cars are reported to be giving good service on 27 railroads, including one which has 62 box cars equipped. Experience indicates that the only damage normally encountered with these floors consists



Intercooling assembly



Aluminum radiation element



Fuel oil heater

## Three Diesel Locomotive Products

Three products recently brought out for application to diesel locomotives by the Wilson Engineering Corporation, Chicago 3, include a final radiation cooling system, intercooling assemblies for Gardner-Denver and Westinghouse air compressors, and a fuel oil heater which uses by-passed engine coolant without any waste of heat.

The final radiation cooling system is made of aluminum, has a weight of 65 lb., and occupies a space 34½ in. by 5 in. by 8⅜ in. The heat transfer of a single element in static atmospheric air is equivalent to 30 ft. of 1½-in. standard pipe. Two elements mounted in parallel are equivalent to 80 ft. of the 1½-in. pipe.

The intercooling assembly is adaptable to both Gardner-Denver WXE and WXO air compressors, and to Westinghouse types 3-CD and 3-CDB. The assembly has a radiation equivalent of 40 ft. of 1½-in. pipe, weighs 120 lb., and is factory tested to 300 p.s.i.

The fuel oil heater occupies a space 24 in. by 12¾ in. by 6⅜ in. It maintains the desired fuel oil temperature by a regulating valve which controls the flow of the by-passed jacket water.

of nail holes and other small holes which may be easily repaired by applying a mixture of the original material with a trowel at minor cost for labor and material.

Plastinail is a joint development of the F. E. Schundler Company, Joliet, Ill.; the Westvaco Chemical Division, Food and Machinery Chemical Corporation, Newark, Cal.; the Dow Chemical Company, Midland, Mich.; and the Weyerhaeuser Timber Company, Minneapolis, Minn. Plastinail is distributed by Schundler east of the Rockies and by Westvaco on the West Coast.

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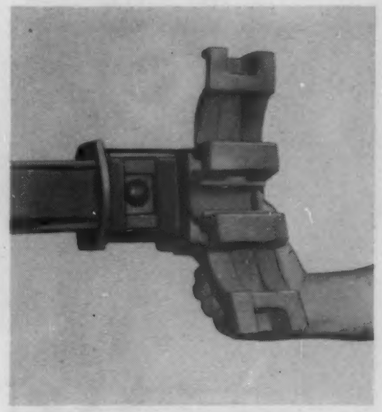
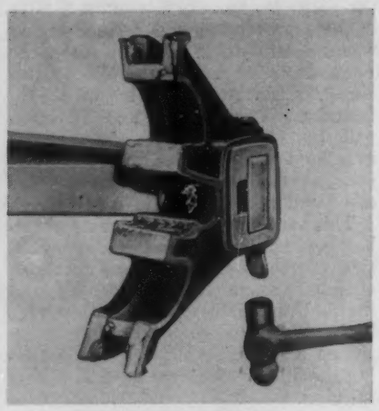




## Break Beam with Quick-Removable Heads

With the recent issuance of an A.A.R. Certificate of Approval to the Buffalo Brake Beam Company, New York, covering the new No. 18 freight car brake beam to be known as the Buffalo Truslock, freight car brake rigging will now have all of the operating and maintenance advantages inherent to the quick-removable brake head, standard on passenger cars and locomotive tenders.

The removable sleeve-type brake head has been a significant factor in the present-day high availability of passenger equipment. Barring accidental damage, it is not unusual for passenger car brake beams to remain under the car for considerable periods, even though the brake heads, being the most vulnerable part of the brake rigging, must be frequently changed.

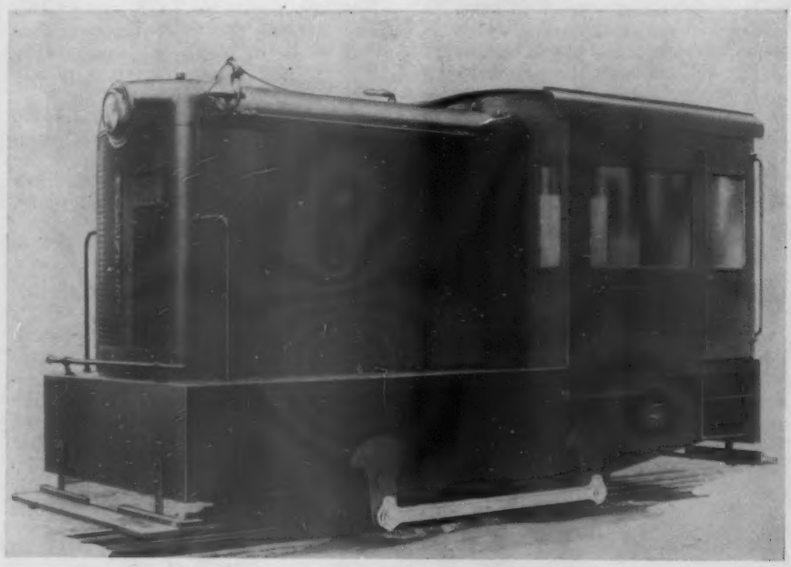
It is claimed that the new Truslock brake beam—the principal feature of which is a novel design of the brake beam ends, permitting the removal of a worn or damaged brake head right at the car by the mere withdrawal of a simple spring-key—will likewise be an important step in the direction of reducing freight car delays due to removing and replacing the entire brake beam when wear or damage requires the application of a new brake head. The new brake beam is of the conventional hanger type of suspension, and is fully interchangeable with A.A.R. former Nos. 3 and 15 and the present No. 18 brake beams.

It is estimated that worn or damaged brake heads account for more than 50 per cent of all freight car brake beam removals. Thus the use of a removable type brake head for freight cars would tend to reduce the volume of brake beams now being sent to reclamation plants by a like amount. In addition, there would be, of course, a corresponding reduction in labor, transportation and handling charges incidental to the movement of brake beams between repair points and reclamation points.

Of interest to mechanical and stores department officers are such features as sleeve and brake heads that are interchangeable on either side of the brake beam, which considerably reduces the inventory on these items; the breathing action of the Truslock brake head reduces operating stresses on the beam itself while considerably lessening wear and tear on the heads; and the truss structure of the new brake beam is completely independent of the brake heads.

The manufacturer states that in addition to the A.A.R. tests upon which Truslock's approval was granted, road tests covering a period of several years were conducted in cooperation with a large Eastern railroad, where a number of the new brake beams were subjected to the severest operating conditions.

The Buffalo Truslock brake beam (A.A.R. No. 64) has been designed



## Davenport Torque-Converter Locomotives

A new series of diesel-powered industrial locomotives with torque-converter drive has been announced by the Davenport Locomotive Division, Davenport Besler Corporation, Davenport, Iowa, manufacturers of Davenport and Porter locomotives.

These hydraulic-drive locomotives are obtainable in a range of sizes and gages to meet individual operating conditions. They may also be equipped for gasoline-engine drive, if desired.

The locomotive in the illustration is 20-tons, 24 in. gage, and was built for a tie-treating company. It is equipped with a No. 6080 General Motors diesel engine and an Allison torque converter.

Among the benefits claimed for torque converter drive are smooth, quiet transition from one speed level to another; absence of engine slowdown during speed changes, freedom from the transmission of load shocks or jerks which make for wear and tear on mechanical parts and assurance of easier operation and greater work output.

primarily as a maintenance brake beam for freight cars equipped with hanger type trucks, and is different from the Buffalo Unit-type brake beam (A.A.R. No. 51).

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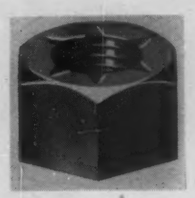

## Gripco Nut for Railroad Use

The Grip Nut Company, Chicago, is now introducing for railroad use the Gripco lock nut which incorporates all principal features including holding power of the No. 3 hot-pressed unit nut heretofore widely distributed and used in railway service. The Gripco nut is the same single unit now available as a semi-finished, thoroughly pretested lock nut in which the holding power is secured by six triangular indentations in the top surface made in the final cold pressing operation.

Because of its semi-finished features, the Gripco nut is being offered as a replacement for the No. 3 nut. It is available in hexagon form only with sizes ranging from ¼ in to 1⅜ in. in either American Standard heavy or regular dimensions. A folder giving complete specifications for ordering the nut has just been prepared.

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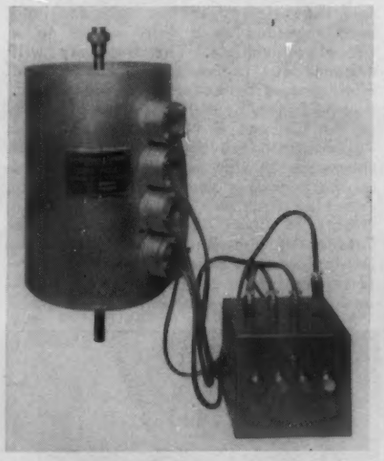
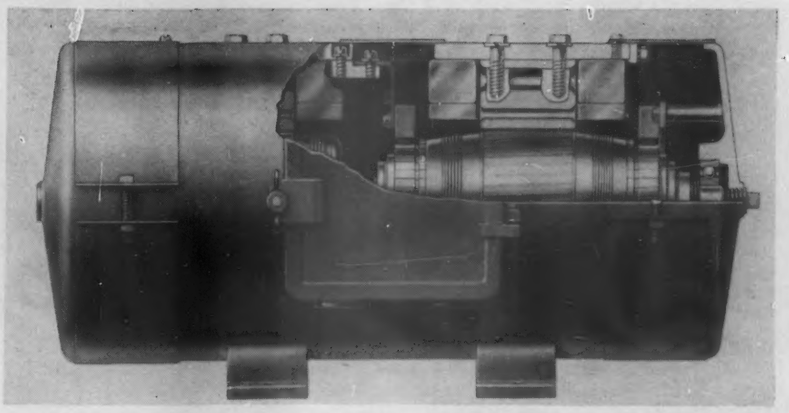


## Drinking Water Sterilizer

The powerful bactericidal rays of ultraviolet light are utilized to kill all harmful bacteria in drinking water flowing through the No. 7 UV water sterilizer introduced by the McDonald Company, Boston, Mass. Its stainless steel reservoir is connected in the drinking water supply line. All water drawn flows past a series of ultraviolet Sterilamps, the number depending on the demand.

The sterilizer device operates on 110 volt, 60 cycle a.c. supply. A pilot light is provided for each of the Sterilamps which provides visual indication that each lamp is functioning. The pilot light network and transformers for starting and running are housed in a stainless steel control unit.

This model is designed to provide drinking water for a standard diner of 36-48 seat capacity. Other models are built to order according to requirements.



## Alternator and M.G. Sets

Single or dual voltages for cab signalling and train communication can be provided through a complete line of motor generator and motor alternator sets introduced by the Safety Car Heating & Lighting Co., New Haven, Conn. Motors of these units are designed for nominal voltages of 32, 64 and 115 volts found on railway equipment. Depending on operating requirements, output can be either single or dual voltage, at the desired value. Where a.c. power is required, radio noise filters are included as an integral part of the motor generator sets.

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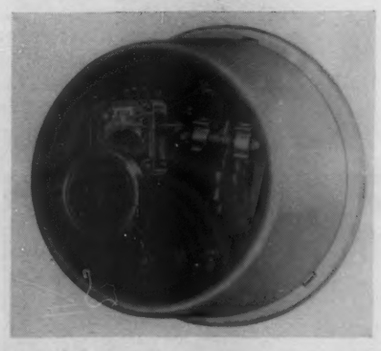

## Automatic Illumination Control

A simple weatherproof illumination control of the plug-in type is announced by the Weston Electrical Instrument Corporation, Newark, N. J. Known as the Model 1089, the unit provides completely automatic "on-off" control of artificial lighting at predetermined levels of daylight, thereby eliminating human judgment and arbitrary time schedules. It is recommended for yard lighting, station area lighting, sign lighting, etc.

The unit, mounted in a standard weatherproof watt-hour meter glass case, consists of a stable dry-disc type photocell, a sensitive relay which is operated directly by the photocell, a clock motor, mercury switch and limit switch. It contains no phototubes, vacuum tubes or capacitors, and requires no stand-by power, drawing no current between on and off operations.

Installing the Model 1089 requires only plugging it into a standard watt-hour meter receptacle. It will withstand adverse climatic conditions and will function at temperatures as high as 140 deg. F and down to —30 deg. F.

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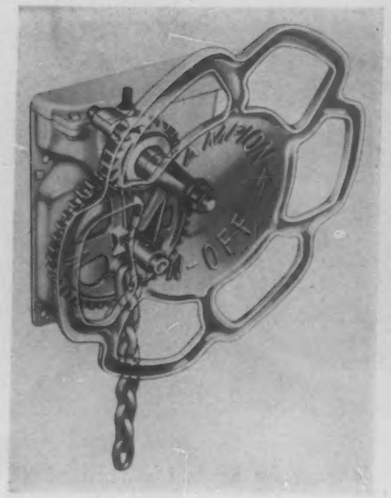
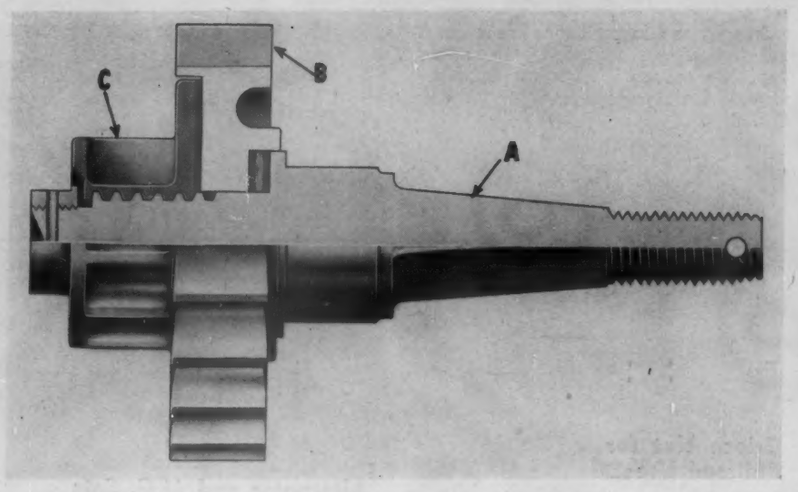
## Freight Car Hand Brake

The National Brake Company, New York, is offering to the railroads the Champion-Peacock brake which was introduced in its original form in 1937 as the Champion Micro-Matic hand brake. One of the unusual features of this brake is that it may be released in any degree simply by manipulating the hand wheel.

This brake is operated by simply turning the wheel clockwise to set the brake and counter-clockwise to release it. Any degree of application or release can be made independently of the other and from any point through-




out its travel capacity. Basically this method of operation is accomplished by the use of an industrial-hoist type clutch. The clutch consists basically of three parts—a hand wheel, shaft, a ratchet and a pinion, augmented by clutch facings and back-off stops. The latter two are refinements of the basic principle involved.

Referring to the cutaway view: Assuming the brake is to be set or applied, the hand wheel shaft *A* might be considered an ordinary bolt whose head corresponds to the threads on the right end, fitted with a washer *B*, i.e. the ratchet, and a nut *C*, i.e. the pinion. Bolts can, of course, be tightened up by either turning the nut onto the bolt or turning the bolt into the nut. Assuming that the nut *C* is held and tightened up by turning the bolt *A*, thereby squeezing washer *B*, the pressure set up by this squeezing action prevents the brake from turning backward since the washer *B*, actually the ratchet, is held at all times from turning backwards by a pawl (in phantom view).

To release the brake the bolt *A* is turned counter-clockwise which, of course, tends to unloosen the nut *C* thereby releasing the pressure on *B*, permitting it to stand still while the bolt and nut *A* and *C* can be turned counter-clockwise in unison.

Assuming again that the brake has been set or applied, the force created by the brake in the brake rigging is naturally transmitted back to the nut *C*, i.e. in the pinion, in a direction of tightening it on to its bolt *A*, i.e. hand wheel shaft, thereby maintaining the pressure on *B* located between *A* and *C*. The brake will remain in this position indefinitely without loss of power. It will not rattle or jar off, but, on the other hand, it can be readily released by simply turning the hand wheel counter-clockwise.

The brake is said to have proved successful from an operating and maintenance standpoint for the following reasons: A switchman can control a freight car equipped with this brake with about the same ease as an automobile can be controlled with foot brake; all operation of this brake requires only the operator's right hand, the left hand being used at all times for holding on to the car; the brake is fully released simply by pulling the wheel counter-clockwise until the load has been released from the chain; even abnormal pressures, such as found when the hand brake has been set up on top of emergency air and the air bled off, can be released by one hand; and it is equipped throughout with self-lubricating Oilite type bushings, each backed up by its own individual lubricant reservoir.

## COMPLETE FIRST RAILWAY POLICE ACADEMY

**Nearly 50 railway police officers from 38 different American and Canadian roads received certificates for completing the two-week National Railway Police Academy at Chicago on June 14. Below—H. G. Moxham (right), chief of police of the Boston & Maine, congratulates Special Agent A. W. Clardy of the Atlantic Coast Line, one of the "students" who completed the course.**

**Mr. Moxham, who is chairman of the Protective Section of the Association of American Railroads, termed the academy a "step in the right direction which will bring benefit to the railroad industry for years to come." D. L. Wood (left, below), chief special agent of the Illinois Central and secretary of the academy, speaking at the award dinner, said that "railway police have too long been regarded as a third wheel on a two-wheel vehicle. The academy will enhance our usefulness to all railroad management." Academy President K. F. Bourne (right, below), inspector of police of the Chicago & North Western, told "graduates" that the "true measure of the value of this school will be found in the practices you can now place in effect on your own railroads." He paid tribute to Chief Special Agent W. G. Fetzner of the Burlington and H. L. Denton, general superintendent of police of the Baltimore & Ohio, in whose minds and hands the academy was formed**

As a result of improvements at Uceta yard, Tampa, Fla., long, heavy trains of phosphate rock can be made up without doubling over. Also terminal delays to trains of perishables have been eliminated

# Yards Improved on System Basis

***A.C.L. follows through on program of modernization to speed service—Major improvements are contemplated at four locations and work of a less extensive nature at several other points***

Two major factors governed the decision of the Atlantic Coast Line to expend the considerable amounts necessary for the completion of a system-wide yard-improvement program, now under way, and for extensive track and line improvements that it has made over a period of several years. First was the desire to rebuild the railway to standards that would permit better service, following the wear and tear and necessarily deferred maintenance and construction during the years of World War II. Second was the desire to have facilities which would permit the maximum efficiency in the use of a fleet of more than 400 diesel locomotives which the Coast Line has in operation and on order.

Following the series of main track improvements,* which were substantially completed several years ago, the yard-improvement program was undertaken in the spring of 1950. Work of this type at Uceta yard, Tampa, Fla., and at Waycross, Ga., has been completed; construction at Florence, S. C., is now under way; and work at the yard at South Rocky Mount, N. C., is beginning. Improvements of a less extensive nature will also be made at several other yards, but the four projects mentioned are the largest involved in the improvement program.

*This work was described in detail in *Railway Age*, March 3, 1946.

Uceta and Waycross yards were selected for completion in time for the 1950-51 perishable shipping season because the need for improvements at Uceta was particularly pressing, while Waycross is the busiest yard on the system and is also the largest transfer point. Uceta yard is some five miles east of Tampa (north by time-card direction) and is the equipment collection and distribution point for nearby phosphate rock mines, as well as for an important perishable shipping area. Extension of the yard to the south was impossible because of the existence of two interlocking plants, one with the Seaboard Air Line and the other with a secondary main line of the Coast Line. Consequently the new tracks were added in the center and extensions made on the north end of the yard.

Formerly, only one locomotive at a time could work on the north ladder at Uceta yard, and this locomotive had to give way to arriving and departing trains. Under the new design, three engines may work the yard lead at the same time by using additional lead tracks of the new layout. In addition, four new tracks ranging in length from 3,450 ft. to 3,060 ft. were added to the southern portion of the yard, while six tracks in the northern section were extended approximately 1,000 ft. each and now range from 4,810 ft. to 4,370 ft. in length. In all, 19,663 lin. ft. of track were laid and surfaced, 2,783 ft. lined and surfaced and 932 ft. removed, while 27 new turnouts were installed and 19 turnouts removed. The improvements enable making up the long, heavy trains of phosphate rock without doubling over and also eliminate terminal delays to trains of perishables. With the exception of a new switchmen's shanty, no new buildings were required at Uceta.

Freight trains enter Waycross from six different directions and one of the lines entering the terminal—that from Dupont, Ga., on the west—is the heaviest-tonnage single-track line on the system. Because of its location,

**A new switching lead is among the improvements made at the yard at Waycross, Ga.**

**The yard improvement program on the A.C.L. involves major work at Tampa, Fla., Waycross, Ga., Florence, S. C., and South Rocky Mount, N. C.**

more diversions of cars of perishable freight are made at Waycross than at any other point on the Coast Line. Trains of perishables from the east coast and certain sections of central Florida come in to Waycross over the line from Jacksonville, while trains with fruit from western and west-central Florida are routed over the freight line via High Springs, Fla., thence via Dupont into Waycross. They are made up into symbol trains at this terminal for fast movement to both eastern and western destinations. The terminal also has the largest reicing plant on the system, as well as the largest transfer station for l.c.l. freight.

Seven new tracks, each with a capacity of 150 cars, were added to the yards at Waycross, as well as a new switching lead. Two new freight leads were built around the yard, eliminating interference of arriving and departing trains with each other. A connecting track a mile long was built from the Western division to the Albany line, across the outskirts of Waycross. Previously, Western division freight trains were operated through downtown Waycross, past the passenger station, and delays occurred in making such movements, particularly when the fleets of passenger trains are operating between the Midwest and Florida during the winter season and are moving through Waycross and stopping at the passenger station. The new cutoff gives freight trains access to and from the Western division without using the main line through the city. More than ten miles of new tracks have been added to the Waycross yard.

The improvements at Waycross include a new frame yard office building, in a more convenient location a mile west of the former office. Also a modern system of floodlights is to be installed.

The third major yard at which improvements are

**Seven new tracks, each with a capacity of 150 cars, were added to the yards at Waycross**

being made is at Florence, S. C., from which secondary main lines radiate to Augusta, Ga., on the west and Wilmington, N. C., on the east, and to a connection with the Winston-Salem Southbound at Wadesboro, N. C. The building of a new transfer station at Florence has been completed, and work is now in progress on other improvements at that point. The former transfer station was located in the middle of the yard and was without access by highway. The new station is situated at the edge of the yard, abutting on a paved street, and ample parking facilities for trucks are provided. This arrangement will be used in expanding the Coast Line's over-the-road trucking of l.c.l. traffic.

Six new tracks, capable of holding 155 cars each, are also being constructed at Florence, as well as a number of new switching leads. The existing stock pens, icing platform and yard office will all be relocated to make way for a more efficient layout of the yard tracks, and new facilities to serve these functions will be constructed elsewhere in the terminal. The new yard office is to be located at the intersection of lines which are projections of the ladder tracks. This structure will have a tower as its second story, which will serve as the office of the general yardmaster, giving him a view of the entire yard from his office windows. Also talk-back speakers will be located along the ladder tracks and in the yard office, which will give the yardmaster contact with all crews in the yard at all times.

Hitherto, diesel locomotives have been serviced and maintained at Florence in facilities adapted from the former enginehouse and steam locomotive shops. As a part of the improvement program, a modern diesel shop, with a fuel station, is being erected there. All of the new facilities are so located as to offer a minimum of interference to the fast switching necessary at Florence on the large volume of perishables moving through this terminal, where main-trackers are made up for movement through to Potomac Yard, Va.

The construction of new facilities at South Rocky Mount, N. C., another terminal from which several lines radiate, and the revamping of the track layout at that point, are just beginning and will be continued as the improvements at Florence are completed.

Moncrief yard, at Jacksonville, Fla., is already equipped with two-way radio communication between the yard engines and the yard office. Similar installations will be made at Uceta, Waycross, Florence and South Rocky Mount as soon as the necessary materials are received. These installations will include a two-way radio in the terminal trainmaster's automobile at Uceta and at Waycross.

The effects of the improvement program are already being felt at Uceta and Waycross, where improved operating methods made possible by the new facilities are eliminating terminal delays. When the entire program has been completed, it will be possible to extend these local improvements to the entire system. Taken in conjunction with the line improvements that have already been made, which included the laying of 131-lb. rail on the entire double-track main line between Richmond, Va., and Jacksonville, and 115-lb. rail on the main line from Jacksonville to Tampa, the result of these expenditures will be much faster movement of freight throughout the system, both on line and in the terminals.

The program of improvements described in this article is being carried out under the general supervision of L. S. Jeffords, operating vice-president of the A.C.L., and R. L. Groover, chief engineer.

# Improved Efficiency and Service

***Annual meeting stresses loss and damage, shipper relations, control of yard costs, employee morale, and rules compliance***

**Above left — Fred L. Houx, superintendent of the Chicago & North Western, Chicago, newly elected president of the American Association of Railroad Superintendents. Above right — C. I. Morton, superintendent of the Seaboard Air Line, Raleigh, N. C., retiring president of the association. Left—Legh R. Powell, Jr., president of the Seaboard Air Line, addressed the annual luncheon meeting**

More than 600 registered members and guests — a record for many years back — attested the drawing power of the annual meeting of the American Association of Railroad Superintendents in Chicago, June 12, 13, and 14. Matters of current interest to operating officers from Canada to Mexico were the subjects of committee reports and panel discussions. Almost 500 heard Legh R. Powell, Jr., president of the Seaboard Air Line, at the annual luncheon on June 13.

N. R. Crump, executive vice president of the Canadian Pacific, opened the meeting with a "charge" to the superintendents pointing out their growing responsibility for economic, effective railroad operations. C. P. Fisher, general manager of the Chicago Union Station, and a past president of the association presented a short talk on the "Part the Railroads Will Play in Civil Defense." President Charles I. Morton, superintendent of the Seaboard at Raleigh, N. C., presided.

Mr. Crump pointed out that "as railroading has become more complex and highly organized, we have tended to centralize more and more responsibility. One aspect of this is a growing tendency for supervisors at each level to be always 'breathing down the necks' of their subordinates. It may be we have gone too far in this. Perhaps, if we are going to build first-class men, we must be prepared to let them run the job on their own. Wherever possible we should set up objective performance tests and then let a man run the job and measure up to these tests in his own way."

Over the coming years, he continued, there will be a long pull, with "constant pressure to always do just a little better than ever before with a little less. So the problem will be the old one of getting better leadership . . . and of getting men to do their job more effectively."

"Our services have been improved in myriad ways," Mr. Powell declared in his luncheon address. "Today this country enjoys the finest rail service in the world—and at a lower cost than anywhere else—conclusive proof of what has been and can be accomplished under our system of private enterprise. The fact that such outstanding progress has been made is due, in no small measure, to the spirit of dissatisfaction with today's best and the zeal to make tomorrow even better."

"A tremendously important function of superintendents," Mr. Powell continued, "is that of preserving and improving the relations of our railroads with the communities they serve. This, of course, calls for a high degree of alertness, and an awareness of the necessity of reporting promptly developments or trends which might have an effect upon your company. Prompt and effective handling of a situation may frequently quench a small flame that might otherwise spread to a conflagration, with serious damage to the community's regard for the railroad."

"Another field in which the superintendent can render great service to the industry is that of employee relations. In my opinion, the foundation for good, bad or indifferent relations is laid at the time of the first interview with the applicant seeking employment. It is then that the employing officer has an opportunity to exercise the discretion born of experience and perform an intelligent job of screening applicants. Judicious selection of new employees can be a potent factor in the continuing process of raising the level of ability and potentials among employees."

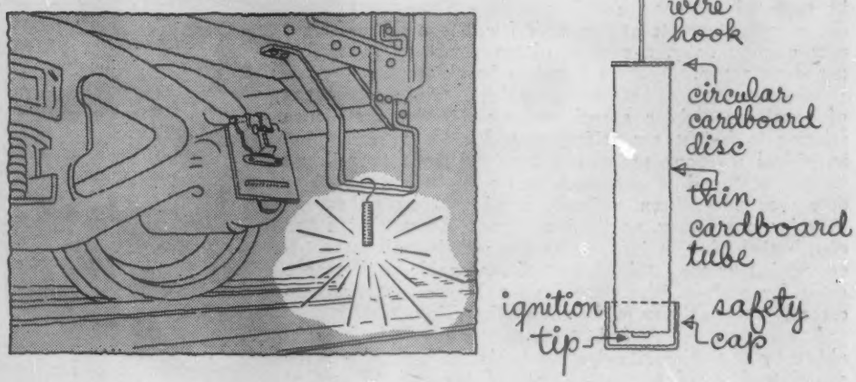
Mr. Fisher declared: "The railroads, like the city police and fire departments, are always ready for any emergency. But an extensive atomic or fire bombing attack would cause terrific destruction and casualties. These are not the only dangers, since we are warned of saboteurs who may create destruction with pin point accuracy and timing, as well as distribute bacteria and psychological propaganda." He described the plans which the railroads in the Chicago area have prepared for use in case of enemy attack (*Railway Age*, December 23, 1950, page 20).

### New Officers

Newly elected officers of the association are: President: Fred L. Houx, superintendent, Chicago & North Western, Chicago; first vice-president: H. E. Bixler,

# Superintendents' Theme

**Our artist's conception of a device by which flares are used to assist hump movements in the Canadian Pacific's St. Luc yard at Montreal, when normal vision is obscured by bad weather. This practice was described during floor discussion at the convention. C.P. yard employees originated the scheme of using regular red fusees stuck in the side of a car, or on the front and rear of a cut of cars, to mark their passage down the hump for the benefit of the retarder operators. Rather than encourage this unsafe use of fusees, a special yellow flare, made with smokeless powder, is now used**




general superintendent of transportation, Boston & Maine, Boston; second vice-president: J. C. Starbuck, superintendent, Burlington, Chicago; third vice-president: J. W. Harman, superintendent, Canadian Pacific, Schreiber, Ont.; and fourth vice-president: B. W. Tyler, superintendent, Pennsylvania, Pittsburgh. D. E. Ferner, superintendent transportation, Chicago South Shore & South Bend, was re-elected treasurer. Newly elected directors include: M. B. Phipps, general superintendent, Nickel Plate, Bellevue, Ohio; S. J. Massey, Jr., superintendent, Illinois Central, New Orleans; J. A. Craddock, superintendent, Lackawanna, Buffalo; E. G. Kiesele, superintendent, Milwaukee, Savanna, Ill. O. L. Gray, general manager, west coast lines, of the Santa Fe at Los Angeles was re-elected a director. Directors elected in past meetings whose terms expire in 1952 and 1953 are: E. C. Johnson, superintendent, New York Central, Mattoon, Ill.; H. H. Clark, superintendent transportation, Erie, Cleveland; G. M. Leilich, superintendent, Lehigh Valley, Buffalo; and W. H. Schmidt, Jr., western editor, *Railway Age*, Chicago.

A highlight of the meeting was an evening panel discussion on the most effective ways to test compliance with rules, with S. M. Gossage, assistant director of personnel, Canadian Pacific, as moderator. Participating panel members—V. A. Erickson, joint superintendent, C. & N.W.-Soo; J. B. Jones, general manager, Western region, P.R.R.; T. E. Wheeler, assistant superintendent, C.P.; and R. J. Cannon, superintendent, B. & O.-S.I.R.T. —handled the subjects of testing flag protection, fixed signals, train orders, and terminal operations in that order. This meeting was marked by record attendance and three hours of lively discussion.

It appeared to be the opinion of the group that efficiency testing is not only "desirable" but vitally essential; that each employee should be tested *at least* once a year, and preferably once every 30 or 60 days. Although there was considerable disagreement as to exactly the best way for handling different types of tests, the group seemed in agreement that the "secret" or "surprise" test is the only one fully effective. It was pointed out that efficiency or performance tests should not be confused with test "traps," which are generally frowned upon. Efficiency tests differ from rule examinations; the purpose of the efficiency test is to determine the degree of *compliance* with the rules.

The panel agreed that, to be fully effective, efficiency tests must be fairly and uniformly conducted by supervisors who are fully qualified on rules. Failure to comply properly with the rules should be followed by adequate discipline. Although there was disagreement as to whether men who have been tested and have fully complied with all rules should be so informed, the majority felt that all employees should be informed.

Discussion brought out that many superintendents conduct efficiency tests using "natural conditions"—e.g., signals set by preceding trains—as well as artificially "created" conditions. Representatives of one road told how they used Valve Pilot tapes in addition to visual observation in testing.

The panel appears to be in agreement on the observation that on most roads yard crew performance is not tested often enough—frequently being overlooked in favor of road tests. Greatest discussion centered around testing compliance with approach signals — the signal which leads most engine crews into trouble.

The superintendents were the guests of the Illinois Central in an inspection of its newly modernized southbound Markham yard, featuring the General Railway Signal Company's automatic switching and retarder system. This modern hump yard was described in the June 17, 1950, *Railway Age* (page 58) and in a pamphlet distributed to the superintendents at the yard by G.R.S.

## COMMITTEE REPORTS

### SUPERINTENDENT'S RESPONSIBILITY FOR EFFICIENT CAR HANDLING

**Chairman, CHARLES C. ROBINSON**
Superintendent Car Service, Monon, Lafayette, Ind.

The freight car is the basic tool of the railroad industry. Without the freight car all reason for the existence of the remainder of the railroad plant, or for its personnel, is removed. A few examples of the importance of improving

the efficiency of utilization of freight cars—not of solving the problem, for it will never be entirely solved—may be seen in the following:

Existing per diem rates are $1.75 per car per day. At that rate the daily per diem cost of 1,000 freight cars on line is $1,750. Consider, then, the effects of an increase of only 10 per cent in the effectiveness of the use of freight cars. If traffic levels are unchanged, per diem expense may be expected to decrease $175 per day. Since few railroad divisions are operated today with fewer than 2,000 freight cars on line daily, a savings of ten per cent in existing per diem expense will be found to be substantial.

The development of a reasonably economical means of supplying division superintendents with basic statistics relating to freight car utilization and car-hire expense on individual divisions presents a real challenge to railroad management and to car accountants; a challenge that, to date, has never been seriously considered by either the superior, accounting, or division officers. Accumulation and distribution of such information on a divisional basis, accompanied by the establishment of reasonable performance goals for each division, would go a long way toward increasing the efficiency of freight car handling.

Any improvement in freight car handling must be brought about by the superintendent and his staff. At best, the superintendent of transportation and the car accountant can only assist—the one by coordinating interdivisional operations and the other by providing necessary statistical information and by pin-pointing outstanding instances of delayed cars. The action itself must be taken by the superintendent and his staff. The following are some of the tools required:

(1) An accurate, complete on-hand report showing cars standing at each station, date of arrival, date of placement, etc. A copy of the daily track check made for demurrage purposes, if placed in the proper hands, will usually suffice if cars located on company service tracks are also included.

(2) An accurate record of cars placed at, and removed from, blind sidings.

(3) Copy of a check of the hold track at terminals made at least once each day.

(4) At least twice a week, track check of train yards to detect "buried" or "lost" cars. This check should show date of arrival of all cars.

(5) Copies of train lists by wire to division car distributor showing empty cars by kind and destination to enable car distributor to check filling of orders and to gage flow of empty cars on the division in relation to its needs.

(6) Adequate inspection of all cars to uncover defects at terminals, thus preventing delays on the road, and to classify properly empty equipment for loading.

The division officer or employee responsible for car movement should check daily and issue proper instructions to start delayed cars moving. If accumulations caused by shipper or consignee are noted, the superintendent should at once notify the officer issuing embargoes for the railroad. Needless to say, customers should not be embargoed until all other means of clearing the congestion have failed.

When trains arrive at terminals, car inspectors should be ready to begin inspection at once. Frequently flat-switching yard layouts are such that inspection of 10 or 15 cars can be made, and blue flags momentarily lifted while these inspected cars are removed from train and switching begun. Advance consists are particularly helpful in expediting switching operations. Terminals should also be required to place cars for connecting lines promptly. Likewise interchange receiving tracks and industry tracks should be pulled frequently.

The matter of industry switching is, perhaps, the most important factor in building and maintaining the good-will of freight shippers. It is safe to say that no amount of delay elsewhere is as irritating to the railway patron as that which occurs on his own siding when the car he loaded—or unloaded—stands idle one or more days after its release.

Everything a railroad does from the freight operating standpoint is directed to one end: the movement of cars. But mere motion is not enough. The motion must also have direction if the public is to be served and the railroad is to function effectively.

## LOSS AND DAMAGE PREVENTION

**Chairman, J. C. STEWART**
Superintendent Stations and Transfers
Pennsylvania
Philadelphia

The committee selected seven aspects of loss and damage prevention work which it thought would be of special interest to superintendents, and presented a consensus on each.

*Rough Handling of Cars.*—In response to inquiry, all railroads indicated this to be the most troublesome of all causes of loss and damage. It has responded to "treatment" to a lesser degree than any of the other causes in the claim account.

Some roads have determined that 80 per cent damage occurs in the rough handling in terminals, leaving but 20 per cent due to all other causes. This would indicate, the committee believes, that constructive work in the elimination of rough handling might well be concentrated in terminals.

The following suggestions are indicative of the methods being used by different roads in seeking to prevent rough handling:

(1) Appointment of aggressive terminal prevention committees in each terminal district, backed by a sustained program of education of yard, train and engine service employees.

(2) Create competition between crews by maintaining a record of the rough handling performance of each crew.

(3) Where car retarders are employed, use only properly trained operators, and make a continuous study of proper pressure requirements, taking into consideration visibility, type of car, weight and lading, track elevations and curvature, temperature, wind direction and velocity, and condition of rail.

(4) Make liberal use of impact recorders.

(5) Make sure there is a proper inspection of hand brakes before cars are humped.

(6) Insist on proper maintenance of track and facilities.

(7) Reduced to a minimum terminal switching of cars.

*Condition of Car Equipment*—The committee reports a growing tendency by shippers to load any available car, whether or not the car is suitable for the commodity involved. Many such cars are "confiscated" and loaded before the railroads have been given an opportunity for inspection.

### *Cooperative Plan*

Railroads have received best results from these practices:

(1) A fully cooperative plan between shippers and carrier yard and station forces for supplying car requirements.

(2) All cars inspected by a competent railroad employee before being released to shippers for loading.

(3) Inspectors should be fully acquainted with class of equipment required for different types of commodity loadings.

(4) Discouragement of confiscation of cars for loading by shippers without prior railroad inspection and release.

(5) Permanently written record retained of all cars inspected, and of instances where opportunity for inspection was not accorded.

*Approved Loading Methods—Cooperation of Shippers*—The committee was impressed with the need for a better method of acquainting all concerned about loss and damage found at destination. The committee suggests:

(1) Make an effort to have consignees notify shippers of the condition of contents of car at destination.

(2) Originating line, in cooperation with shipper, should endeavor to find a method of loading that will prevent loss or damage.

(3) Be sure destination agents send a copy of carload damage report to agent at origin, accompanied by photographs when possible.

(4) Each case of loss or damage from carload cars should be handled by claim prevention officer of destination line with originating line.

(5) Make inspections of shippers' loading methods as often as practicable, including a check of their claim experience.

**A popular feature of the meeting was a panel discussion on the most effective method of testing compliance with rules.**

**The panel agreed that tests conducted in a uniform manner with trained supervisors are most effective**

*Handling of L.C.L. Freight — Employee Education*—Responsibility for proper training of employees handling l.c.l. rests with supervisors. All railroads recognize the importance of proper educational and training programs carried on continuously, supplemented by group meetings and day-by-day, on-the-job training.

The A. A. R.'s "Rules for the Receipt, Handling, Stowing, Bracing and Delivery of L. C. L. Freight," as revised in October 1949, contains the fundamental rules for good l.c.l. practices. Some roads have rules of their own, and some require supervisors to make test checks to determine the degree of compliance with the rules.

Five l.c.l. service suggestions were submitted:

(1) Program of continuing education on proper methods of handling l.c.l.

(2) Use of l.c.l. car unloading report is advantageous.

(3) Errors in handling should be investigated and charged to individuals, and posted.

(4) Use of photography as a means of visual education.

(5) Use of mechanical handling equipment as a claim prevention measure.

*Uniformity In Loss & Damage Inspections*—The experience of the eastern carriers in the use of outside agencies for inspecting fresh fruits, vegetables, meat, beer, etc., has been favorable because of the uniformity of inspection and because trained inspectors are better able to determine actual transportation responsibility. The committee feels that inspection of concealed loss & damage should be improved and that this can best be accomplished by joint inspection service. The committee agrees with several of the recommendations of the National Prevention Committee.

*Problem Of The "Stop-Off" Car*—This appears to be the "problem child" on all roads because the first consignee rarely shows sufficient interest to spend the time or money to restore and brace the load. As a result the carrier is, in many cases, left "holding the bag" and is required to use its own forces to protect the remaining lading.

The committee agrees that all stop-off cars should be inspected before proceeding after each such stop for unloading. If the remaining lading is not in condition for safe movement the first consignee should be requested to make it safe. If he refuses, there should be some arrangement for the railroad to require the shipper to assume the cost of making the car safe with railroad forces.

## EDUCATION OF SUPERVISORS AND MAINTENANCE OF EMPLOYEE MORALE

**Chairman, S. J. MASSEY, JR.**
Superintendent, Illinois Central, New Orleans

The committee does not believe that the morale of railroad employees has reached as low a level as some are inclined to believe. It is true that unsettled political and social conditions tend to lower the morale of everyone, but that should not be taken as a sign of special weakness in the railroad industry.

Good morale, the committee suggests, starts with the careful selection of new employees so as to permit a greater latitude of choice for later advancements. An interview guide, and an interviewer who is above the average in intelligence, trained in interviewing, free from prejudices, and not easily influenced, are suggested as necessary hiring tools. After complete information on each applicant is assembled, it should be carefully evaluated and thoroughly investigated to determine whether he has the desired qualifications.

Once accepted, the new employee should be given a great deal of attention by his immediate supervisor to be sure he gets off to the right start. He should become subject to regular employee education and training programs. Some companies share operating information with their employees; they tell where the company gets its money, and where and how it is spent. Active employee suggestion systems—honestly and fairly administered—have proved valuable. And there are other company programs such as periodic medical examinations, group insurance, hospital departments, company magazines, etc., which contribute their share toward employee well-being.

It is important that supervisors know the men they supervise. The desire of every man is for a sense of personal dignity. He likes to feel that he is somebody, that his work is accomplishing something, and is appreciated. Favoritism should be discouraged. Each superintendent and supervisor should examine his own attitude toward his subordinates. If there are some he doesn't like, or who are inimical, that is a sign he is not apt to be a good or effective

**Top—"Some railroads have determined that 80 per cent of the damage to lading occurs in the rough handling of cars in terminals, leaving but 20 per cent due to all other causes." Proper maintenance of yard tracks, grades, switches and crossovers is essential for the smooth operation of any yard; improper or inadequate maintenance was cited as an important cause of rough handling in yards**

**Center—The proper receipt and transmission of signals is one of the important factors in reducing the rough handling of cars in the terminal**

**Below—"With the cooperation of local and yard conductors it is possible to get greatly improved car efficiency and service for the shipper. Because they are on the spot, an alert crew can speed service, expedite movement and placement of empties, and reduce per diem charges. For the same reasons, a crew with the wrong frame of mind can quickly ruin both performance and service"**

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supervisor. The committee suggests a remedy for getting rid of enemies—make friends of them.

A specific program for the education of supervisors—sponsored by top management—is recommended by the committee. This program should include continuous information about the company. Many railroads have undertaken specific educational courses for supervisors, including such things as public speaking, economics of transportation, human relations, business organization, principles of supervision, conference leadership, and a conference course in foremanship. Some railroads are using additional educational aids, such as libraries of motion pictures and sound slides covering such subjects as safety, highway-rail accidents prevention, fire prevention, freight claim prevention, good housekeeping, servicing equipment, job training, employee suggestions, courtesy, supervision, etc. Although many railroads are offering specific educational programs, some supervisors have been reluctant to take advantage of the opportunities offered them. They need help and encouragement to develop into the kind of supervisors who will themselves grow, and in turn help to develop others.

## EFFICIENT HANDLING OF SHOP CARS AND CAR INSPECTION

**Chairman, W. T. RICE**
Superintendent, Richmond, Fredericksburg & Potomac, Richmond, Va.

The efficient handling of shop cars falls into three natural headings: handling on the road, and handling in flat-switching and hump yards.

*Hump Yard Handling*—Trains should be inspected in the receiving yard prior to classification with a gang of three men—one "topping the train" and one on the ground on each side. Where rapid inspection is essential, and the extra expense can be justified, two gangs may be employed. After inspection, a report of defective equipment should be given to the yardmaster immediately so that the proper cars can be marked for the repair track on the classification cut or guide slip.

It has been found that an underground pit inspector, located at the apex of the hump, can, with the aid of spotlights, detect defects in brake rigging and running gear which would not normally be visible from the side of the car. Defective cars can be identified for the hump conductor or yardmaster by means of an electric alarm or intercommunicating system.

Separate tracks in the classification yard for cars requiring light repairs, and for cars requiring heavy repairs, have been found advantageous. In yards handling considerable perishable traffic, a third track for perishable cars helps in getting these cars into the shop in a group for preferred handling. These repair tracks should be directly connected with the shop, permitting direct movement into the

shop, when requested by the shop foreman, without interrupting the operation of the yard. The shop yard should be so placed that repaired cars can be moved directly into the receiving yard, and be in a position to be classified, without interrupting the normal flow of traffic.

*Flat Switching Yard Handling*—Here essentially the same procedure should be followed as in a hump yard, except that the inspection should start as soon as possible after the road engine has been detached from the train, and before yard crews start breaking the train. To speed yard switching, the inspection crew should give up completed portions of the train to yard crews as soon as possible, and without waiting for inspection of the entire train.

The committee recommends that the shop have direct connection with the repair tracks, and the shop yard be directly connected with the receiving yard, so that cars can be moved in and out of the shop without interrupting normal yard operations.

In the shop, at least one track should be set aside for the handling of perishable cars so that they can be given preference. And another track should be set aside for heavy repairs, and be equipped with adequate mechanical aids such as hoists, portable winches, and strategically located material. Cars should be cut while being placed in the shop so as to allow an easy flow of men and materials.

The practice of repairing the "easy cars" first should be avoided, the committee comments, particularly where shop facilities are not operated on a 24-hour basis.

*Shop Cars Set Out Along The Road*—This is one of the most costly of all freight operations, as well as being a serious cause of delay to the shipment involved.

## BETTER CONTROL OF YARD COSTS

**Chairman, S. F. McGRANAHAN**
Assistant General Manager, Erie, Youngstown

It is generally agreed, this committee reports, that in recent years yard operating costs have increased out of all proportion to other railroad operations. Although much progress has been made in recent years in increasing the capacity of the railroad plant, in step with increased traffic, by the installation of heavier rail and roadbed, automatic signals, centralized traffic control, more powerful and economical locomotives, and improved rolling stock, "it seems unfortunate that the same degree of progress has not occurred in yards." This lack of proportionate improvement seems to be due, in some instances, to space limitations, in some to insufficient funds available for yard improvement and in some to not appreciating the considerable expense that is involved in yard operations.

Unfortunately, there are relatively few large yards which have been planned or developed in line with economical operating practices. Most of them have just grown "like Topsy."

Detailed study must be given any new yard layout project, and the design based on volume and modified to satisfy other factors:

(1) Minimum time permitted for handling perishable and other preferred traffic.
(2) Concentration of arrivals.
(3) Interferences which may limit the speed of operations.
(4) Relation between train length and length of arrival or departure tracks.
(5) Grades approaching humps.
(6) Departure point: from classification yard or separate departure yard.
(7) Movement of road engines to or from trains.

The American Railway Engineering Association Bulletin 483, November 1949, contains committee reports covering yard design. Because of the broadness of the subject, the final report deals only with the volume and kind of traffic and the physical factors affecting design.

Installation of retarder yards has been one of the most important factors influencing efficiency and controlling yard costs in recent years.

The following matters are submitted for consideration in any yard rearrangement project:

(1) Proper grades to permit smooth handling on leads.
(2) Relocation of auxiliary tracks so as to minimize movement time between them and the main yard.
(3) Relocation of enginehouse facilities near main yard.
(4) Location of crossovers to avoid circuitous routes and reverse movements.
(5) Best practical lighting system.

The committee comments that there is a decided lack of advance information on interchange and inter-yard runs. It is suggested that studies be made in an effort to obtain advance information so that transfer runs and yard crew assignments can be worked out in advance to a greater extent so as to eliminate unproductive time.

## SUPERINTENDENT'S RESPONSIBILITIES FOR SHIPPER RELATIONS

**Chairman, G. B. AYDELOTT,**
Superintendent, Denver & Rio Grande Western, Denver, Colo.

"Shipper relations are the base on which traffic volume and revenues are built," this committee declared. "While a railroad's traffic department may be the primary agency for contact in sales, service and rates, this alone does not adequately encompass the entire problem." The operating organization, and the personnel concerned with the actual performance of the service, should certainly be equally concerned with producing good shipper relations. The efforts of the superintendent and his staff towards this end are necessary "to achieve success in meriting the continued and increased business which only suitable service can bring. Suitable service includes much more than just dependable regularity"; it must include an amicable mutual understanding between the shipper and the transporter.

The first requirement for a superintendent, the committee states, is an intelligently instructed and directed staff organization. An alert, aggressive operating organization will constantly supervise maintenance of advertised road schedules, prompt pulling and delivery of cars in terminals, rapid handling through terminals, and loss and damage prevention.

The second requirement is that his staff, and all the employees under his jurisdiction, be friendly and courteous in their attitude toward the public. Of importance in this, is the example which the superintendent himself sets in his personal and telephone contacts with employees as well as with the public. Untiring efforts must be made to achieve courteous, careful handling by freighthouse forces; friendly, polite and honest effort on the part of yardmasters, switch foremen and local conductors; helpful courtesy by passenger trainmen, dining car crews, and ticket office employees. Even roadmasters, trainmasters and section foremen, who do not normally meet the public, can play an important part by the kind of contacts they maintain in their local communities.

"Letting complaints go unattended will do nothing to improve shipper relations and will surely work towards a loss of business." Because most complaints arise from some operating or service feature, there is no doubt, the committee feels, that the superintendent or some member of his staff is best equipped to handle them. "While traffic representatives make many more customer contacts than operating people and are, therefore, the recipients of many complaints, these should be referred to the superintendent for handling whenever possible. In some cases, joint handling by the traffic representative and the superintendent may be required. Very little is gained when the traffic representative is obliged to take it upon himself to act as an apologist for the operating department."

The superintendent who makes and keeps a wide range of customer contacts will find the handling and prevention of complaints appreciably aided.

# GENERAL NEWS

## Rail Rate Bills Proposed in Canada

### Call for Dominion-wide freight rate equalization

A national policy of equal railroad freight rates for all parts of Canada is proposed in legislation recently introduced in Parliament at Ottawa. To implement freight rate recommendations of the Royal Commission on Transportation (*Railway Age*, March 26, page 42), the contemplated legislation would establish Dominion-wide equalization of railroad rates as a general goal, and give the Board of Transport Commissioners wide powers to effect such equalization.

Embodied in three bills sponsored by Transport Minister Lionel Chevrier, the new legislation involves what is said to be the most extensive "overhaul" of rate policies in Canadian railroad history. Passage of the bills, however, will probably be deferred until the fall session of Parliament, to allow time for study of them; actual equalization of rates may go into effect some time in 1952, if the proposed bills are adopted. The Transport Board has been making its own study of the equalization problem, and is expected to act as soon as possible after passage of necessary enabling legislation.

Introduction of the equalization enabling measures culminates a long fight for such legislation by a number of provinces, particularly in the west, which began during the post-war series of rate-increase cases. The western provinces, where the rate level is generally higher than in the east, will benefit particularly from equalization. Eastern seaboard provinces already have some rate reductions under the Maritime Freight Rates Act of 1927, while rates in Ontario and Quebec are generally lower than in the west.

The proposed legislation would additionally benefit the western provinces by providing that rates between the east and the interior parts of western provinces beyond the head of the Great Lakes could not be more than one-third higher than transcontinental rates between the east and west coasts.

#### Exceptions Provided

While the proposed bills "suggest"—without making mandatory—adoption of new methods in setting up equalized rate scales, and establish as "national freight-rate policy" the "same charges for the same types of rail traffic" in all parts of Canada, they allow certain exceptions to the general rule. Most important of these exceptions are:

1. Competitive rates—those reduced by the railways to hold business against competition;
2. International rates between Canada and the United States, which customarily follow patterns laid down by the Interstate Commerce Commission;
3. Rates on export and import traffic, which are set to enable Canadian ports to compete with U. S. ports; and
4. Rates protected by the Maritimes statute.

The Transport Board would be authorized to make any other exceptions it considers advisable.

#### Railway Freedom Restricted

The proposed legislation would also restrict the present freedom of the railways to adjust rates either up or down within authorized limits. The railways would, under the new bills, have to show cause, and bear the burden of proof, for increasing any individual rate, if there is any objection to the increase. They would be allowed to lower their rates on short notice to meet competition, but would have to furnish the board with more information than they do now concerning such reductions. This provision is included in answer to the contention of western provinces that present regulations produce too great a concentration of low competitive rates in central Canada, thus requiring relatively higher rates in the Maritimes and the western provinces.

The equalization policy would also tend to reduce the rate per mile as length of haul increases.

Meanwhile, the eight provinces which have urged equalization of freight rates, i. e., all except Ontario and Quebec, are continuing to oppose before the Transport Board the railways' pending application for a 15 per cent rate increase which the railroads contend is necessary to meet higher material prices, higher wage scales and a shorter work week for their employees. The board is expected to decide the case shortly on an interim basis, and to give it fuller consideration next fall.

## $5,000,000 Improvement Program for N.Y. & L.B.

The New Jersey Board of Public Utility Commissioners has approved a $5,000,000 improvement program for Pennsylvania trains serving the north New Jersey coast via the New York & Long Branch. Included in the program for 1951 is complete overhauling of 23 steam locomotives and assignment of 10 additional modernized, air-conditioned coaches to supplement 48 similar cars now in service. Twenty more air-conditioned coaches will be added in 1952 and 20 more in the following year.

## Regional Hearings in Ex Parte 175 Concluded

Except for a hearing to be conducted in Memphis starting June 19, all regional hearings in Ex Parte 175 (which have dealt entirely with specific commodities) have been concluded. The testimony of shippers at Portland, Ore., Salt Lake City and Chicago all followed a pattern which could be summed up as: We are not opposed to a general increase in railroad freight rates *per se*, but we ask that special consideration be given to our particular commodity as we cannot absorb the entire cost of such an increase without shrinking the size of our present market. We believe that railroad rates have been increased to the saturation point and that any further increases will merely result in wholesale diversion of traffic to trucks with the railroads winding up no bet-

## In the Week's News . . .

### HIGHLIGHTS


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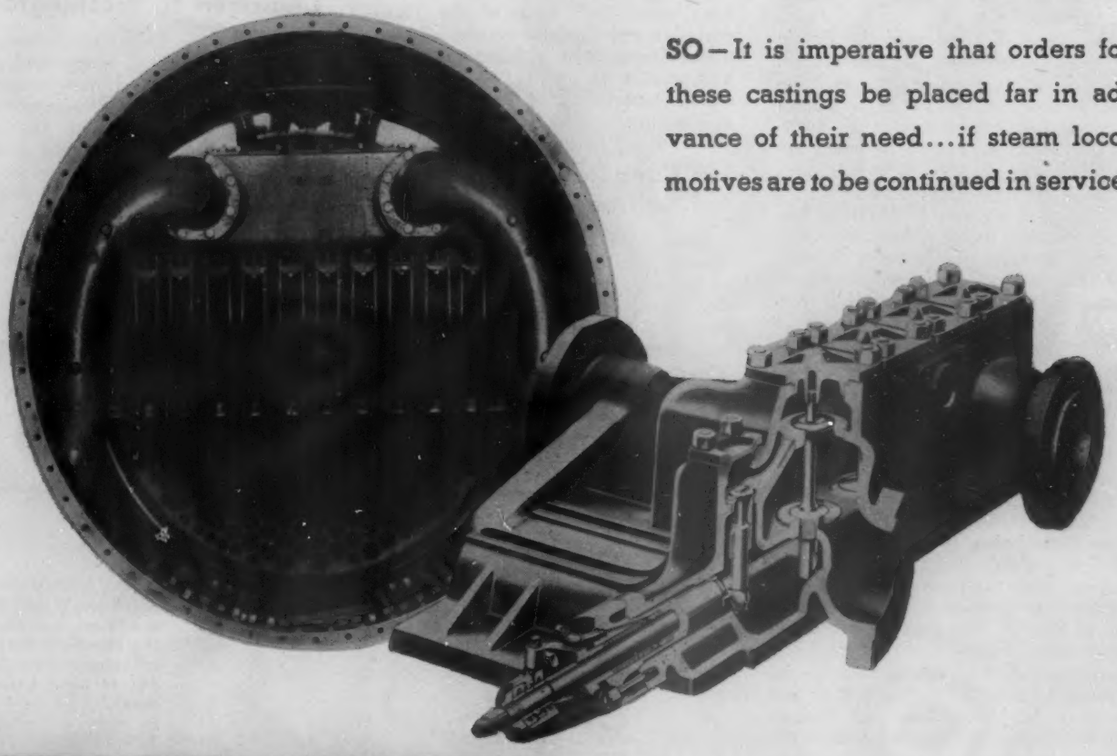
# Look Ahead!

With shortage of foundry production for castings, such as superheater header and multiple-valve throttle castings—it is becoming next to impossible to make delivery promises because these castings are difficult to cast and machine. There is every indication that this trend will continue.

SO—It is imperative that orders for these castings be placed far in advance of their need...if steam locomotives are to be continued in service.



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ter off financially than they are at present. The increase, if granted, would force many marginal producers out of business and would serve to strengthen the position of producers of substitute products.

One of the relatively few shippers representatives who voiced direct opposition to the proposed 15 per cent increase was J. V. Norman, who appeared for both the Southern Hardwood Traffic Association and the Associated Cooperage Industries of America. Speaking at the Chicago hearing (which was conducted by Commissioner Charles D. Mahaffie, with L. E. Lindquist, chairman of the Minnesota Railroad & Warehouse Commission, sitting in as a representative of state commissions), Mr. Norman said: "It is our position that the applicants are not entitled to any kind of increased freight rates in view of their present earnings."

At the Salt Lake hearing (conducted by Commissioner W. E. Lee with Commissioner K. Potter of the Public Utilities Commission of California), P. J. Gilfeather, representing the Montana division of the Farmer's Educational & Cooperative Union of America, also went on record as being opposed to any further rate increases. He said his opposition was based on the fact that farmers of Montana had a difficult time under present rates and further increases would cause them to lose their contact with major markets. Canadian railroads and non-rail carriers would get an increased share of Montana's produce traffic if further increases were placed in effect on western U.S. roads.

At the Portland hearing (which began on June 5 and was conducted by Commissioner Lee, Examiner M. T. Corcoran and California Commissioner Potter), J. H. Carkin, supervisor of rail transportation of the Public Utilities Commission of Oregon, entered detailed exhibits comparing railroad income from freight and passenger services in periods before and after World War II. The purpose of the exhibit was to show that the so-called "passenger deficit" has become an increased burden on freight traffic year by year. In his exhibits and through the testimony of his witnesses, Mr. Carkin sought to show that western roads, having a substantially better net operating income generally than lines in Eastern territory, could afford to help western shippers by holding down increases on long haul rates, thus permitting these shippers to compete in markets east of the Mississippi river.

In all three hearings the principal concern of the shippers was preservation of their competitive relationship with producers of other areas. Western shippers, for the most part, favored a "tempering" of a straight percentage increase by application of maximums which would tend to equalize the increase with that paid by southern and eastern producers who are closer to major markets. Very little mention was made in any of the testimony concerning the welfare of the railroad industry, although, upon cross-examination, most of the witnesses did admit that a strong railroad industry was essential both to the economy of their particular industry and to the nation as a whole.

## Zeis Joins N.P.A. Staff

Dr. Paul M. Zeis has been appointed director of the Industrial Economics Division in the Policy Coordination Bureau of the National Production Authority. The division, the N.P.A. announcement explained, "serves as the central point for the collection and analysis of data with respect to materials and end products, and with respect to the operation of N.P.A. programs."

Dr. Zeis has been in the service of the federal government since 1942. Prior to his present appointment he had been, since 1947, chief of the Transportation and Communications Division of the Department of Commerce. His new position leaves him with the Commerce Department, of which N.P.A. is also a unit.

## No Canadian Enthusiasm For Railroad to Alaska

Surveys of a proposed railroad to Alaska "will be held in abeyance until circumstances make it more likely that full Canadian participation can be secured," Secretary of the Interior Chapman has advised President Truman. The secretary was reporting on an assignment he had to follow through on legislation which Congress passed in October, 1949, to authorize the President to enter an agreement with Canada for location surveys and economic studies of the proposed railroad.

Mr. Chapman's report was embodied in a recent letter which the White House made public without comment. The letter noted that the U.S.-Canadian Permanent Joint Board on Defense had expressed its "considered opinion" that "sufficient military justification does not exist at the present time and under present circumstances" for the construction of the proposed line.

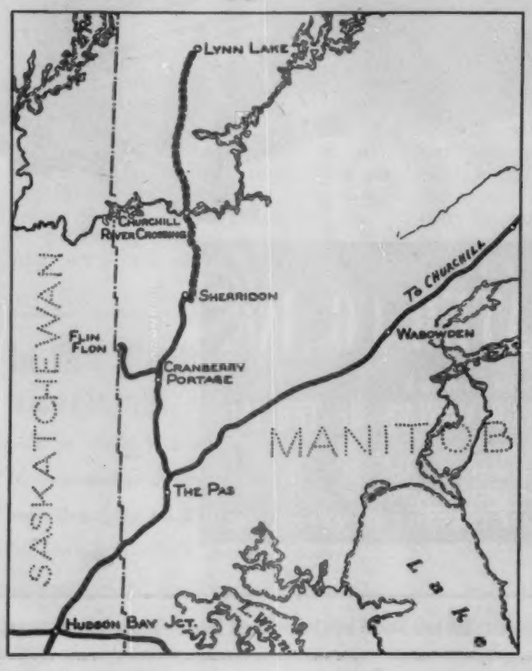
The board also took the position that location surveys and economic studies would be unwarranted on the basis of military considerations. In an April 27 note, Mr. Chapman also reported, "the Canadian Government stated that, in its view, a joint economic study could hardly serve any very useful purpose at this time."

## Three "Ops" Call General Chairmen to Washington

Leaders of the three operating brotherhoods, whose wage and rules cases remain unsettled, have summoned the general chairmen of their unions to a meeting in Washington, D. C., on June 27. Proceedings of the meeting are expected to include consideration of the railroads' latest offer in the long-pending disputes.

That offer is understood to be on the pattern of the settlement reached recently with the Brotherhood of Railroad Trainmen (*Railway Age* of June 4, page 60). The other three brotherhoods are the Brotherhood of Locomotive Engineers, Brotherhood of Locomotive Firemen & Enginemen, and Order of Railway Conductors.

*(Continued on page 95)*




**THE CANADIAN NATIONAL WILL BUILD a 153-mi. railroad into the Northern Manitoba wilderness from Sherridon to Lynn Lake (see map). The new line, to cost an estimated $14,500,000, will serve a mining area at Lynn Lake with an estimated annual production of 8,400 tons of nickel, 3,400 tons of copper, 100 tons of cobalt, 1,500 tons of copper sulphide and 72,000 tons of ammonium sulphate. Approximate value of the production is estimated at $14,000,000. A survey party of 17 engineers is now in the field and it is expected that construction will start this summer with completion scheduled for the fall of 1953**

something new has been added!

# Vapor Radiant Panel WALL Heating

VAPOR Radiant Panel Heating is providing comfortable temperatures for passenger travel, however mild or extremely cold outside weather conditions may be. Entire trains completely heated with the Vapor Radiant Panel Heating System are keeping passengers comfortable in coaches, compartments, roomettes and various private accommodations. From baggage car to observation dome cars, temperatures are controlled and give passengers the most modern, comfortable travel ever experienced. Awake or asleep, passengers enjoy the comfort which Vapor Radiant Panel Heating brings to modern railroad travel.

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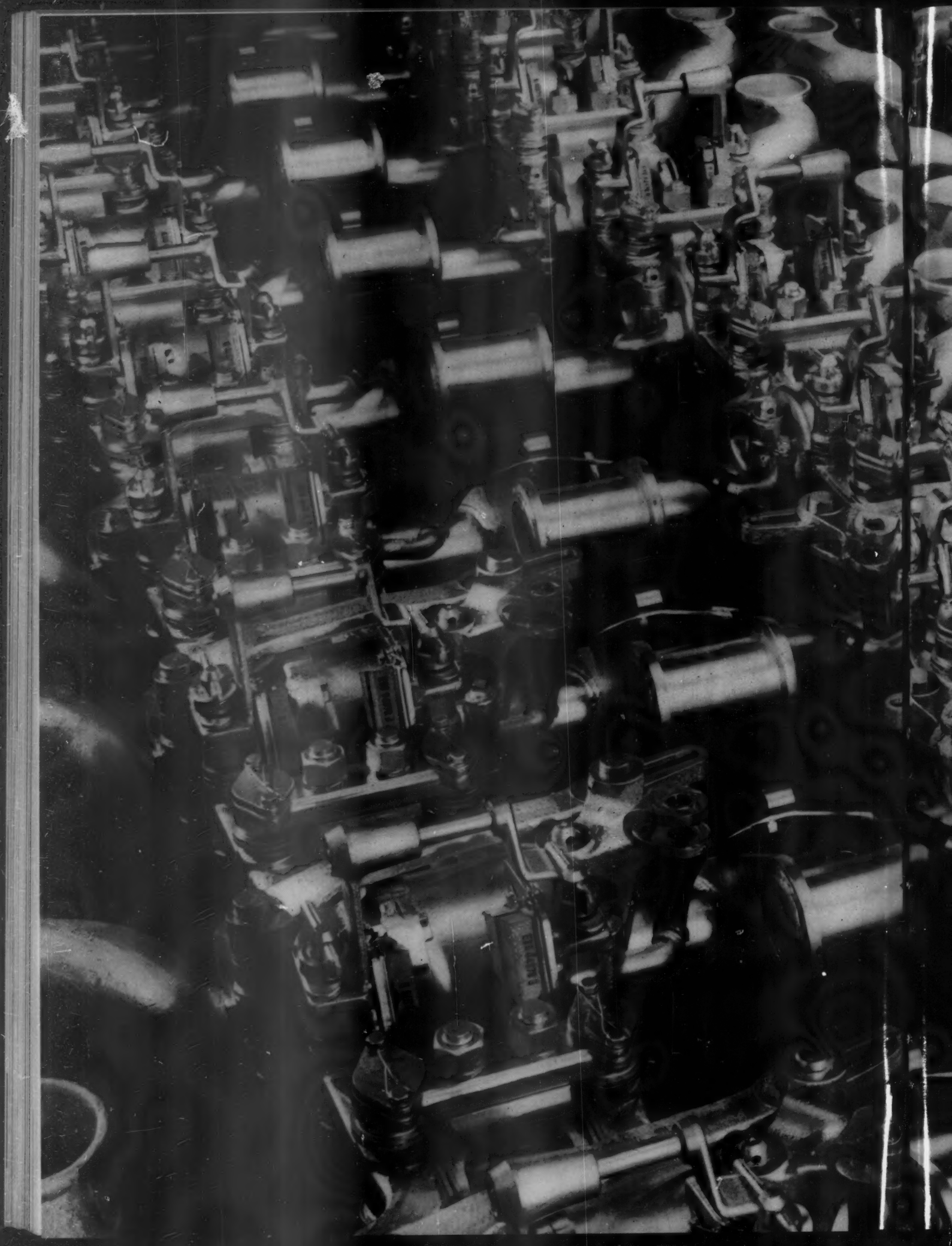


# FROM THE ASSEMBLY LINE TO THE MILWAUKEE LINE

Thirty-one car sets of Budd's latest model CF disc brake have just been delivered to the Chicago, Milwaukee, St. Paul and Pacific.

The Milwaukee Road's acceptance of the Budd disc brake is based on long experience. It was one of the first railroads to install these brakes that offer exceptionally low maintenance, smoother and quicker stops, assurance against wheel heat-checking.

The Budd-built CF disc brake can be adapted to any type of truck. The Budd Company, Phila. 32.

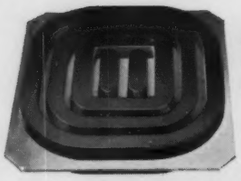
Budd

# Lading Protection
## Begins with the Car

Lading arrives "In The Pink" when shipped in cars Twin-Cushion equipped.

Twin-Cushions are the modern car-cushioning device engineered and proven to provide a degree of lading and car protection unobtainable with conventional draft rigging.

Twin-Cushions have no solid point. Comprised of over-sized dual rubber pads working against galvanized steel plates, Twin-Cushions take the bite out of impact, safe-guarding both cars and lading against the majority of excessive classification yard coupling impacts.



OVER SIZE PADS FOR EXTRA ABSORPTION AND CAPACITY

**Waughmat Twin-Cushions**

***THE LOWEST COST BIG IMPROVEMENT YOU CAN MAKE ON ANY CAR***

**WAUGH EQUIPMENT COMPANY**

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CHICAGO • ST. LOUIS

WAUGHMAT *Twin Cushions*

*(Continued from page 90)*

Their chief executives have been negotiating with management representatives in Washington under the auspices of the National Mediation Board. Meanwhile, the railroads remain under government control. The Army has been operating them since August 27, 1950, when President Truman seized them in the face of a nationwide strike threat posed by the O.R.C. and B.R.T.

The settlement with the latter, which is understood to have provided the pattern for the offer to the other three unions, was embodied in a three-year agreement under which yardmen received a wage increase of 33 cents per hour and roadmen an increase of 18½ cents per hour. These increases included the hourly raises of 12½ cents per hour to yardmen and five cents to roadmen which the Army granted last February.

## Electro-Motive Delivers 10,000th Diesel Unit

In a ceremony witnessed by some 600 railroad officers and civic and industrial leaders of Chicago and the Middle West, the Wabash, on June 14, took delivery of the 10,000th diesel locomotive unit to be built by the Electro-Motive Division of General Motors Corporation. In the brief ceremony, which took place on the grounds of E.-M.-D.'s Plant No. 1 at La Grange, Ill., Wabash President Arthur K. Atkinson accepted a gold-plated control lever for the locomotive from Electro-Motive's General Manager B. A. Dollens.

Immediately following the ceremony, Electro-Motive held an "open house" at the LaGrange plant during which several new locomotive developments were publicly shown for the first time. The center of attraction was a new 340-hp. diesel-hydraulic industrial switcher — still strictly a development project — which is powered by two General Motors 6-71 diesel engines through Allison torque converter transmissions in a manner similar to the Budd Company's rail diesel cars. Guests also were shown a special exhibit featuring major development projects in product engineering and manufacturing process engineering. Among these were a completely redesigned cab for switching locomotives based on an extensive study of suggestions polled from switch engine crews; a new six-wheel, three-motor truck for high speed service; a new clasp brake, and new smaller-sized dynamic brake hatches.

Earlier in the day, guests toured Electro-Motive's Plant No. 2, on Chicago's South Side — where complete locomotive cab assemblies for road freight, passenger, switching and general purpose locomotives are put together on a conveyor assembly line.

### "Drawbar Pull"

As hosts for the day, Mr. Dollens introduced each of the officers of Electro-Motive and G.M. who were present for the occasion, following a luncheon served in full view of the 10,000th locomotive unit and others displayed on the plant's delivery track. Among the guests were Charles E. Wilson, president of General Motors; H. L. Hamilton, a vice-president of the corporation and a founder of the predesessor Electro-Motive Corporation; Cyrus Osborn, former general manager of Electro-Motive and now head of G.M.'s general engines division, and C. F. Kettering, research consultant.

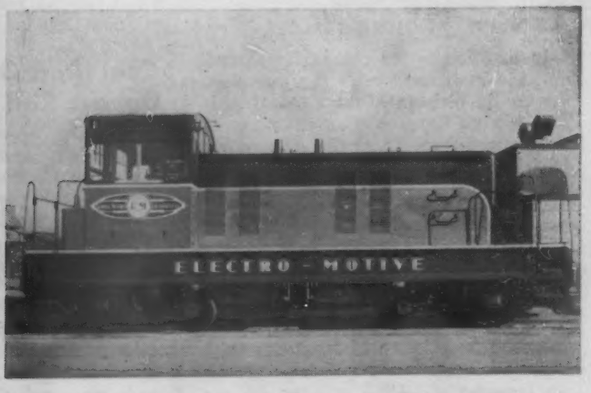
Speaking briefly and informally, Mr. Kettering recalled how he was once asked about the drawbar-pull of a particular diesel unit. "Offhand I cannot say exactly," Mr. Kettering recalled his reply, "but it seems to be strong enough to pull several railroads out of the hands of the receivers!"

Mr. Dollens paid tribute to those outside of the Electro-Motive family who helped make the production record of 10,000 diesel locomotive units within a span of 15 years possible.

"You can give an unskilled mechanic the finest tool in the world and he will not get very far with it," Mr. Dollens pointed out. "Give it to a skilled man

**AMONG THOSE PRESENT** at the ceremonies at La Grange on June 14 (left to right) were: H. L. Hamilton, G.M. vice-president and founder of Electro-Motive; C. M. Jessup, general manager of G.M.'s Fabricast division; Ernest Kuehn, former Pacific Coast manager for E.-M.D., now retired; and D. H. Queeney, general service manager, E.-M.D.

**ASSEMBLY LINE BUILDING**—Believed to be the first use of a moving assembly line by a locomotive manufacturer is this cab-assembly section of Electro-Motive's Plant No. 2 in Chicago. Complete locomotive cab assemblies for E.-M.D. freight, passenger, switching and general purpose units are put together here




**IT'S HYDRAULIC**—An experimental 340-hp. industrial switcher revealed by Electro-Motive during the ceremonies commemorating completion of the 10,000th General Motors diesel locomotive unit. It is powered by two G.M. 6-71 diesel engines equipped with Allison torque converter transmissions and is still a development project

and you get great results. I do not believe the 10,000th diesel unit ever would have been produced if the diesels' high potential for improved service and reduced costs had not been forcibly brought out by the way in which they were used by the railroads. Let us never forget that it is American railroad men who, in the final analysis, handle the diesel locomotives so as to get the most out of them for the public."

**"Symbol of Hard Work"**

In accepting the 10,000th locomotive unit (a 2,250-hp. E-8 passenger unit bearing Wabash road number 1009), Mr. Atkinson termed the unit "a real symbol of many years of hard work on the part of the mechanical engineers, the production experts, the skilled workmen, the suppliers and the railroad men, all of whom have cooperated in perfecting diesel power for the railroad industry."

Mr. Wilson spoke at some length about G.M.'s employee-relations policy and the corporation's efforts to enable each worker to produce more with less effort. This he said, was the "American way of progress" which resulted from "promoting the initiative of millions rather than the dictatorship of a few." Mr. Wilson voiced his opposition to widespread economic controls even during times of national emergency. "Obviously," he said, "the military must have priority on materials and some control of credit is also necessary, but beyond that, the open market and customer demand should govern. No man or any group of men is smart enough to keep full economic control of this country current."

In connection with the recent so-called locomotive materials allocation "scandal," Mr. Wilson explained that Electro-Motive had "used no undue influence whatever." He said that the entire incident was the result of certain "anti-business" politicians "smearing" the efforts of business executives "who are merely trying to get a job done."

## Another Exhibitor!

In addition to the companies named on page 56 of last week's *Railway Age*, the Ozalid division of the General Aniline & Film Corp. was an exhibitor at the annual meeting of the Accounting Division of the Association of American Railroads, held at New York June 11-14, inclusive.

## Freight Car Loadings

Loadings of revenue freight in the week ended June 16 totaled 826,239 cars, the Association of American Railroads announced on June 21. This was an increase of 12,913 cars, or 1.6 per cent, compared with the previous week; an increase of 20,363 cars, or 2.5 per cent, compared with the corresponding week last year; and an increase of 176,888 cars, or 27.2 per cent, compared with the equivalent 1949 week.

Loadings of revenue freight for the week ended June 9 totaled 813,326 cars; the summary for that week, as compiled by the Car Service Division, A.A.R., follows:

REVENUE FREIGHT CAR LOADINGS
For the week ended Saturday, June 9

| District | 1951 | 1950 | 1949 |
|---|---|---|---|
| Eastern | 141,056 | 142,567 | 142,995 |
| Allegheny | 172,123 | 163,570 | 168,552 |
| Pocahontas | 60,040 | 60,303 | 69,786 |
| Southern | 125,813 | 121,726 | 119,174 |
| Northwestern | 136,485 | 129,483 | 130,556 |
| Central Western | 119,031 | 123,019 | 119,500 |
| Southwestern | 58,778 | 55,373 | 57,593 |
| Total Western Districts | 314,294 | 307,875 | 307,649 |
| Total All Roads | 813,326 | 796,041 | 808,156 |
| Commodities: | | | |
| Grain and grain products | 43,075 | 44,257 | 49,391 |
| Livestock | 7,213 | 7,241 | 7,951 |
| Coal | 137,516 | 145,679 | 136,086 |
| Coke | 16,201 | 14,368 | 13,052 |
| Forest products | 50,875 | 45,263 | 40,355 |
| Ore | 93,129 | 81,083 | 80,219 |
| Merchandise l.c.l. | 75,310 | 82,996 | 91,992 |
| Miscellaneous | 390,807 | 375,154 | 339,110 |
| June 9 | 813,326 | 796,041 | 808,156 |
| June 2 | 744,644 | 709,896 | 698,824 |
| May 26 | 811,799 | 780,926 | 784,824 |
| May 19 | 809,475 | 743,313 | 773,910 |
| May 12 | 808,127 | 711,789 | 771,738 |
| Cumulative total 23 weeks | 17,436,608 | 15,485,383 | 16,640,608 |

**In Canada.**—Carloadings for the week ended June 9 totaled 86,302 cars, compared with 84,598 cars for the previous week and 79,972 cars for the corresponding week last year, according to the Dominion Bureau of Statistics.

| | Revenue Cars Loaded | Total Cars Rec'd from Connections |
|---|---|---|
| Totals for Canada: | | |
| June 9, 1951 | 86,302 | 33,289 |
| June 10, 1950 | 79,972 | 31,483 |
| Cumulative totals for Canada: | | |
| June 9, 1951 | 1,793,946 | 822,671 |
| June 10, 1950 | 1,632,394 | 700,277 |

## Canned Goods Loading Requirements Delayed

The Interstate Commerce Commission has set back from July 1 to July 16 the effective date of Service Order No. 878 which is designed to require "heavy" loading of canned goods and foodstuffs in packages. The suspension was effected by Service Order No. 878-A, issued June 20. (*Railway Age* of June 18, page 65.)

## Coal And Other Groups Oppose Rail Rate Boost

Extensive opposition to higher railroad freight rates was presented to the Interstate Commerce Commission last week as the commission held further hearings in the Ex Parte 175 proceeding.

Principal testimony at these latest hearings came from the bituminous coal industry. Other industries opposing increased rates include nonferrous metals, anthracite coal, sugar, aluminum, petroleum coke, brick, clay and tile, and cement. The hearings were continuing as this issue went to press.

Beginning this week (June 25), the final round of hearings will begin with presentations from the government agencies. These, too, will be in opposition to the proposed increases, and will include the following: Agriculture, Commerce and Interior Departments, Economic Stabilization Administration, General Services Administration, and Tennessee Valley Authority. Railroad rebuttal will follow, and final oral argument in the case is scheduled to begin July 9.

Meanwhile, the American Trucking Associations announced its intention to intervene in the rate case. An A.T.A. statement said the association would oppose the railroad petition "to forestall the use by the railroads of added revenues to finance selective rate cuts that would undermine 'truck rates.'" The statement went on to say that noncompetitive traffic is used deliberately by the railroads "to underwrite destructive competition with respect to competitive traffic."

The Ex Parte 175 proceeding involves the railroads' proposal for a freight-rate increase of 15 per cent. This would be a permanent advance, supplanting the interim-relief increase averaging overall about 2.4 per cent, which was approved by the commission in its March 12 report in the case. (*Railway Age*, March 19, page 69.)

At the hearings last week, the position of the coal industry was generally outlined by the National Coal Association. Ford K. Edwards, director of the association's Bureau of Coal Economics, summed up the industry's position when he said the proposal to increase coal rates would be "sheer economic suicide."

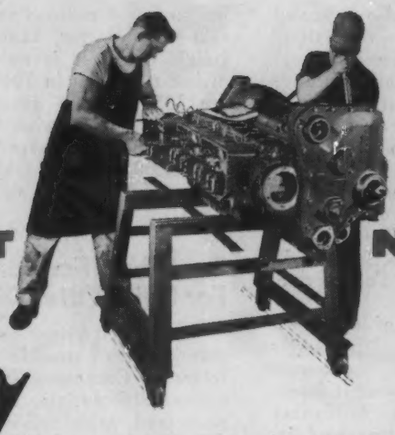
Other coal men agreed and all opposed the increase. They commented on inroads which "substitute fuels" have made on coal markets, and several suggested that instead of an increase the carriers should make downward readjustments in rates. Coal traffic already is paying an unfair share of the revenue needs of the carriers, they contended.

## Gross Revenue in May 16.3% Above Last Year

From preliminary reports of 81 Class I railroads, representing 81.4 per cent of total operating revenues, the Association of American Railroads has estimated that May gross amounted to $705,678,058, an increase of 16.3 per cent above the $606,575,778 reported for the same 1950 month. Estimated May freight revenue was $597,531,887, as compared with May 1950's $516,224,134, an increase of 15.8 per cent. Estimated passenger revenue was $56,882,165, as compared with $47,382,491, an increase of 20 per cent. All other revenue was up 19.3 per cent—$51,264,006 as compared with $42,969,153.

## "Non-Ops" Ask Mediation Of Union-Shop Cases

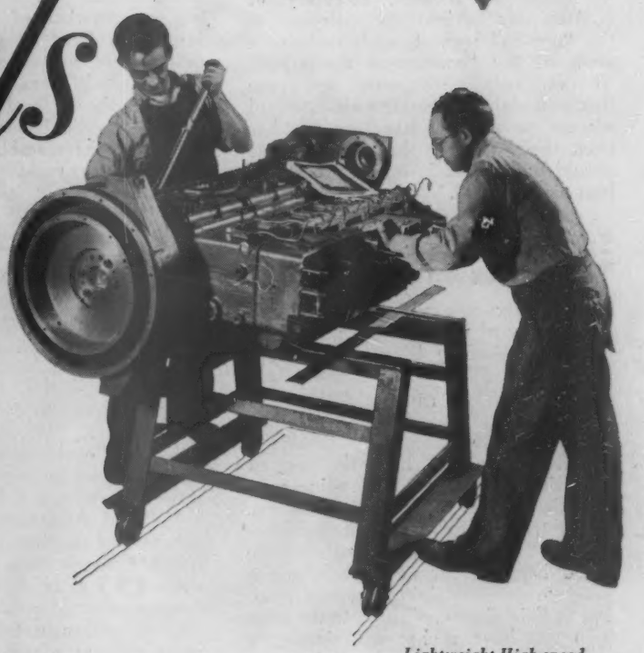
Seventeen unions representing nonoperating railroad employees have invoked the services of the National Mediation Board in connection with



**BUILT NOT ONCE BUT TWICE**

# Cummins®

## CUSTOM BUILT Diesels



Rugged, lightweight, high-speed Cummins Diesels perform better because they're custom-built to *fit each job.* And each engine is actually built twice. Assembled, run-in tested, disassembled, inspected . . . then reassembled and tested *again.* Precision building, Cummins exclusive fuel system . . . efficient service and parts organization, enable users to get peak performance, less "down-time" and *more* rugged, dependable power from Cummins Diesels. *See your Cummins dealer.*

*Lightweight High-speed Diesel Engines (50-550 hp) for:* on-highway trucks • off-highway trucks • buses • tractors • earthmovers • shovels • cranes • industrial locomotives • air compressors • logging yarders and loaders • drilling rigs • centrifugal pumps • generator sets and power units • work boats and pleasure craft

**CUMMINS ENGINE COMPANY, INC., COLUMBUS, INDIANA**

Export: CUMMINS DIESEL EXPORT CORPORATION ◦ Columbus, Indiana, U.S.A. • Cable: CUMDIEX

**Diesel power by CUMMINS**

CUMMINS Dependable DIESEL

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### CAR SURPLUSES, SHORTAGES

**Average daily freight car surpluses and shortages for the week ended June 16 were announced by the Association of American Railroads on June 21 as follows:**

| | Surplus | Shortage |
|---|---|---|
| Plain Box | 15,648 | 3,122 |
| Auto Box | 5 | 20 |
| Total Box | 15,653 | 3,142 |
| Gondola | 125 | 3,708 |
| Hopper | 13 | 1,261 |
| Covered Hopper | 0 | 52 |
| Stock | 1,674 | 34 |
| Flat | 12 | 734 |
| Refrigerator | 4,707 | 0 |
| Other | 240 | 64 |
| Total | 22,424 | 8,995 |

their requests for working agreements with provisions for a union shop and check-off of union dues. The requests were served on the railroads sometime ago.

Thomas E. Bickers, secretary of N.M.B., has advised the railroads of the "non-op" request, wich includes a proposal for "concurrent mediation." The railroads are expected to oppose that proposal as something which would amount to national handling. It has been their position that the requests should be handled in separate proceedings on each road.

## Erie Centennial Exhibit Train Goes on Display

In further recognition of the 100th anniversary of the 1851 opening of its original main line between the Hudson river and the Great Lakes (*Railway Age*, May 14), the Erie placed on display at Hammond, Ind., on June 18 a special 18-car centennial exhibition train which will bring the story of the railroad to about 100 on-line communities within the next two months.

The train includes the old-time locomotive, "William Mason," an old-fashioned baggage car and coach, and a museum car containing exhibits relating to Erie history. Visitors to the train also will have a chance to inspect a modern passenger coach, dining car, sleeping car, box car, flat car, refrigerator car and radio-equipped caboose.

## Poll Indicates Single Transport Agency Wanted

A poll taken by the Transportation Department of the United States Chamber of Commerce indicated that 67 per cent of the transportation executives who voted want a single federal transportation agency to handle all regulatory and promotional functions, other than for emergency action. The poll, taken at the Southeastern transportation conference held in Atlanta, Ga., on June 7 and 8, by the national chamber in cooperation with the municipal chamber, also indicated that 85 per cent of the executives think transportation agencies should be kept free from control by the executive branch of the government.

The conference was the second held by the U.S. chamber to survey the transportation field with the aim of proposing measures for improving the structure and services of domestic transportation facilities. The first was held in Oklahoma City on January 19 and 20 (*Railway Age*, February 5, pages 48 and 62).

Seventy-two per cent of those answering the Atlanta poll were carrier representatives, 20 per cent were shippers and 8 per cent were independent transport interests. A further breakdown by primary transport interest showed 45 per cent under rail, 37 per cent under highway transport, 12 per cent water and 6 per cent air.

A preponderance of replies supported the chamber's policy for separating air mail payments into "subsidies" and actual payments for service. Overwhelming support was accorded the chamber's policy advocating that federal funds not be appropriated to aid construction of airports devoted largely to local flying activities. Virtually every answer called for liquidation of the federal government's interest in the Federal Barge Lines. Belief that the St. Lawrence seaway project cannot be a self-liqudating project and that it should not be built unless it can "pay its own way" also was indicated.

The greatest diversity of answers was elicited by questions on motor vehicle sizes and weights. Nationwide uniformity of regulations received 48 per cent support; 40 per cent favored present regulations and 12 per cent voted for regional uniformity. A large majority supported different size and weight regulations for different classes of highways. The replies of highway transport representatives indicated heavy support in that group for nationwide uniformity and federal regulation.

Railroad representatives and many shippers answering the poll said national transportation policies must be revised. Virtually all other carrier representatives and most shippers and independent transport interests indicated belief that the solution to the railroads' long-run financial difficulties would be found in greater railroad efficiency. The final question asked the executives to name the one most important factor, other than construction of new cars, necessary to keep freight-car shortages at a minimum. Most respondents thought carriers should use their present car supply more efficiently, although almost as many believed the answer was to load and unload cars more promptly. After eliminating the votes of railroad representatives, the choice calling for greater carrier efficiency was by far the greatest.

C. McD. Davis, president of the Atlantic Coast Line, joined Alvin W. Vogtle, vice-president of the DeBardeleben Coal Corporation, in a request for increased railroad rates. Mr. Bates said revenue for hauling a ton of freight one mile is only 40 per cent higher now than in 1949, while wages are 135 per cent greater. Railroads, he added, to do what is expected of them in 1951, will have to spend about $1,000,000,000 more than if wages and prices of two years ago were still in effect.

## Cost Justification Proposed For Rail-Water Differentials

Two Texas congressmen have introduced bills to provide that when the Interstate Commerce Commission prescribes differentials between all-rail rates and joint rail-water rates, the differentials must be "justified by proof of a lesser cost for the through service via the part water route as compared with the direct all-rail route."

The bills, H.R. 4414 and H.R. 4483, were introduced by Representatives Thomas and Thompson, respectively. They would insert the foregoing language in the Interstate Commerce Act's section 307(d) which now contains no such proof-of-lesser-cost requirement.

# EQUIPMENT AND SUPPLIES

## Locomotive Order Backlog A Record 2,454 Units

Class I railroads on June 1, 1951, established a new all-time high record in the amount of new locomotive power on order, according to an announcement by the Association of American Railroads.

On June 1 the roads had 1,839 new locomotives on order consisting of 2,454 power units. The previous high record was reported on April 1 this year when there were 1,883 locomotives on order consisting of 2,420 power units.

The number of complete locomotives on order June 1 was slightly less than on April 1, but the number of power units increased because all locomotives were diesel-electric except for 16 steam and three electric, the A.A.R. said. It added that these diesel-electrics included a larger number of road locomotives which generally consist of from two to four separate units coupled together.

On June 1, 1950, Class I roads had 1,009 new locomotives on order, including 996 diesel-electrics, nine steam and four electric.

During the first five months of 1951, Class I roads placed 1,055 new locomotives in service, of which 1,048 were diesel-electric, six steam and one electric, the A.A.R. said. In the same period of 1950, the roads installed 922

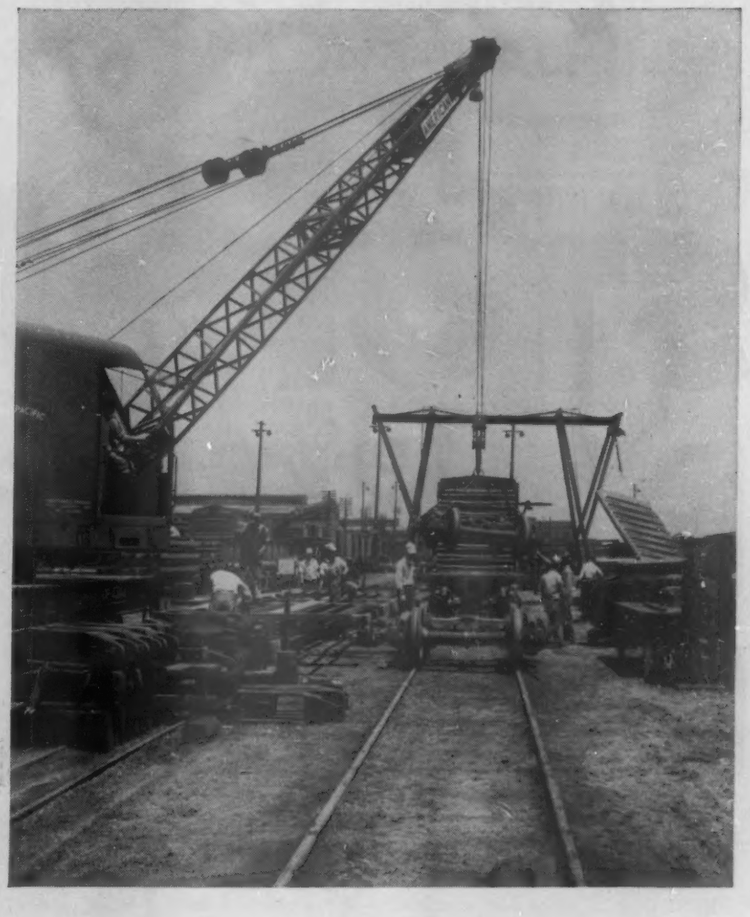
*(Continued on page 101)*

# 4500 cars coming up!

WANT TO learn some tricks about extra heavy assembly line work . . . and the handling of big sub-assemblies? Ask Union Pacific—now putting into service 4,500 new freight cars, built on its three assembly lines at Omaha, Grand Island, and Denver.

One of the neatest tricks seen in this big project is the ingenious use of American Locomotive Cranes. These fast, flexible machines pick up, swing and place a whole truck unit, a one-piece boxcar side or other big components with amazing speed and accuracy. In addition, of course, U.P. uses its fleet of American Locomotive Cranes for magnet handling of scrap; for unloading ties; for bridge work; for switching; and for dozens of other jobs.

The American line . . . world's largest selling family of locomotive cranes . . . offers gasoline, diesel or DiesELectric models, capacities from 25 to 80 tons. Mail the coupon for literature.



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**American Hoist & Derrick Company**

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# STOP RUST with RUST-OLEUM

Always an operating hazard—and a constant drain on the maintenance budget—rust is a doubly dangerous enemy now when it is difficult to obtain metal replacements.

RUST-OLEUM stops rust effectively—is the practical answer to many railroad rust problems. Its tough, pliable, rust-resisting film gives excellent protection to bridges, rolling stock, metal buildings, signal equipment, tanks and many other rustable metal surfaces.

## CUT YOUR MAINTENANCE COSTS

RUST-OLEUM cuts maintenance costs in two ways. (1) It prevents rust on new rustable metal surfaces so that costly replacements can be deferred longer than previously could be expected. (2) Because RUST-OLEUM can be applied *even* over metal already rusted—usually without sandblasting or the use of chemical rust removers—it saves many, many man hours. *Write for your copy of the NEW RUST-OLEUM Railroad Catalog.*

"Rigid economy, Mon!"

Available in colors, and aluminum

**RUST-OLEUM CORPORATION**
**2548 Oakton Street, Evanston, Illinois**

(*Continued from page* 98)
locomotives, including 918 diesel-electric and four steam.

Class I roads puts 217 new locomotives in service in May this year, all being diesel-electric except for one electric and two steam locomotives.

## FREIGHT CARS

The **Denver & Rio Grande Western** has ordered 1,000 70-ton 16-drop-door gondola cars from the General American Transportation Corporation at an estimated cost of $7,000,000. Delivery of these cars, inquiry for which was reported in *Railway Age* of April 23, page 48, is scheduled for the third quarter of 1952. The road also is inquiring for 25 70-ton covered hopper cars.

The **St. Louis-San Francisco** has ordered 100 50-ton pulpwood cars from its own shops. Construction is scheduled to begin during the third or fourth quarter of this year, depending upon receipt of the necessary materials.

## LOCOMOTIVES

The **Baltimore & Ohio** has ordered 44 diesel-electric locomotive units. Eighteen 1,500-hp. "A" and nine 1,500-hp. "B" freight units were ordered from the Electro-Motive Division of General Motors Corporation. Six of these are scheduled for delivery in the first quarter, and 21 in the third quarter of 1592. The American Locomotive-General Electric Companies will build six 1,600-hp. "A" and three 1,600-hp. "B" freight units for delivery in February 1952. The Baldwin-Lima-Hamilton Corporation will construct two 1,600-hp. "A" and one 1,600-hp. "B" freight units and five 1,600-hp. road-switching units. The B.-L.H. freight units are scheduled for delivery next April and the road-switching units next February.

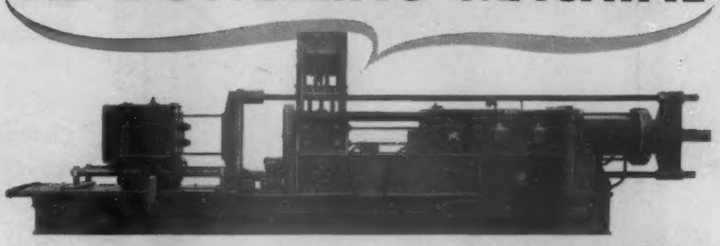
The **Chicago, Milwaukee, St. Paul & Pacific** has ordered a total of 78 diesel-electric locomotive units, costing an estimated $10,200,000, for delivery between September 1951 and May 1952. The Electro-Motive Division of General Motors Corporation will build six three-unit 4,500-hp. freight locomotives; six three-unit 4,500-hp. passenger locomotives; 12 1,500-hp. road-switching units; and three 1,200-hp. switching units. Fairbanks, Morse & Co. will build 10 1,200-hp. switching units; the American Locomotive-General Electric Companies 10 1,000-hp. switching units; and the Baldwin-Lima-Hamilton Corporation seven 1,200-hp. switching units.

The **Lehigh & Hudson River** has ordered two 1,600-hp. diesel-electric locomotive road-switching units from the American Locomotive-General Electric companies at an approximate cost of $294,000. One unit is scheduled for delivery in July and one in October.

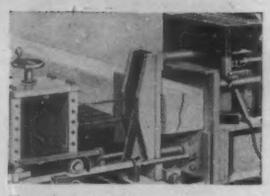
CUT TIE REPLACEMENT COSTS

WITH THE MODERN, AUTOMATIC GRAHAM

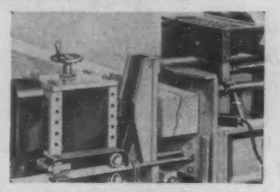
TIE DOWELLING MACHINE



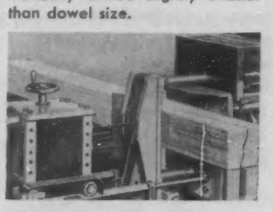
Dowelled ties—as proved in service—provide increased service life and reduce tie replacement costs to a minimum. Now . . . the Graham Tie Dowelling Machine has been designed and developed to reduce dowelling operations to lowest cost. Completely automatic, this modern machine applies Giant Grip Dowels into one or both ends of ties in a fraction of the time required by other methods. Investigate this machine today and give your road the benefit of its advantages in saving time, money and effort.



**First Step**—Ties are automatically fed into the machine, equalized for position and squeezed in the vise.



**Second Step**—Holes are automatically drilled slightly smaller than dowel size.

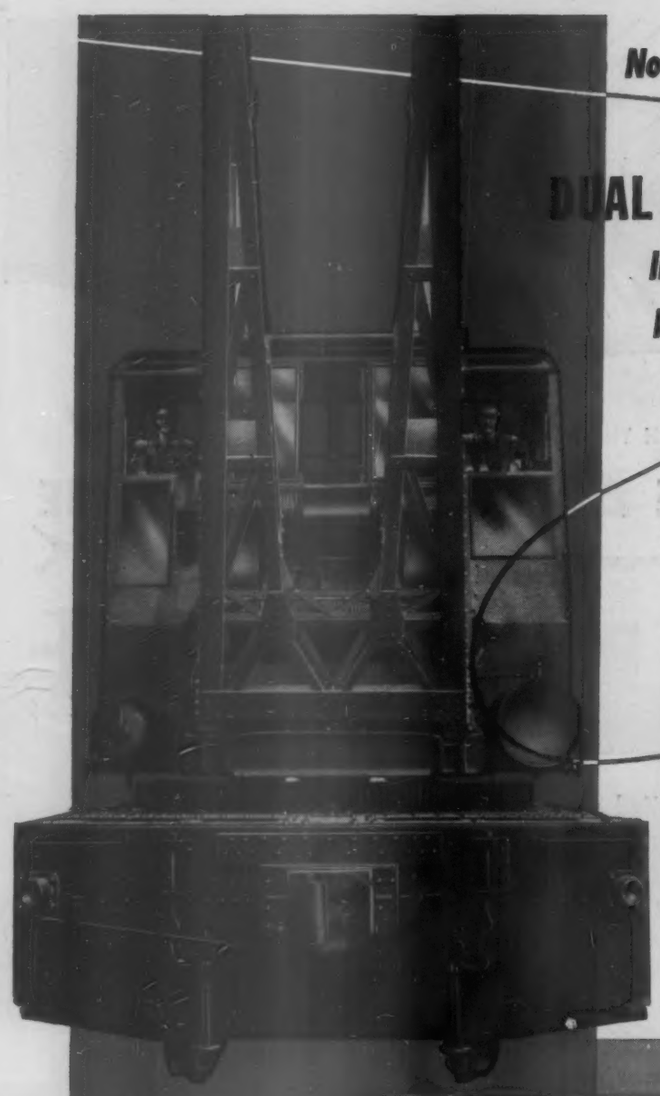


**Third Step**—Dowels are automatically screwed into tie by hydraulic pressure, completing operation. Tie is released and is then ejected by incoming tie.

*Write today for Bulletin DM-1*

GRAHAM TIE DOWEL SERVICE CO.

1201 HUNTINGTON BANK BUILDING • COLUMBUS, OHIO



## *No Need For a Ground Man With*

# NEW BROWNHOIST DUAL CONTROL DIESEL CRANE

## *Increases Safety and Efficiency In Maintenance-Of-Way Work*

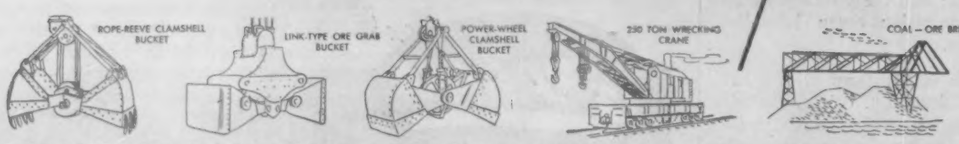
Industrial Brownhoist's Dual Control Locomotive Crane, with a complete set of interlocking controls on each side of its high Monitor-type cab, is ideally suited to maintenance-of-way work because it affords 100% visibility *on either side of the track and to the rear.* The operator of a Dual Control Crane has no blind spots, thus there's no need for a ground signalman. When the operator's work shifts, he has merely to lock the controls where he's sitting, cross to the opposite side and continue his work with the other set of controls. Brownhoist Dual Control Locomotive Cranes are available in all capacities from 20 tons up, with travel speeds ranging up to 13 m.p.h.

***Added safety and efficiency is assured because the Dual Control Crane, like all Industrial Brownhoist cranes, is equipped with the new open-type boom that allows the operator full visibility even when the boom is in line with his work. 14" safety clearance is provided between revolving upperworks and carbody.***

OPERATOR'S VIEW OF LEFT SIDE OF TRACK

OPERATOR'S VIEW OF RIGHT SIDE OF TRACK

## BROWNHOIST BUILDS BETTER CRANES

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## INDUSTRIAL BROWNHOIST CORPORATION • BAY CITY, MICHIGAN

**DISTRICT OFFICES:** New York, Philadelphia, Pittsburgh, Cleveland, Chicago, San Francisco, Canadian Brownhoist Ltd., Montreal, Quebec.
**AGENCIES:** Detroit, Birmingham, Houston, Los Angeles, Portland, Seattle, Spokane.

The **Northern Pacific** has ordered 23 diesel-electric locomotive units at an estimated cost of $3,304,777. The Electro-Motive Division of General Motors Corporation will build three 1,200-hp. switching, four 1,500-hp. road-switching and one 1,500-hp. "B" freight units; two 4-unit (two "A" and two "B" units in each) 6,000-hp. freight locomotives; and one 3-unit (two "A" and one "B" units) 4,500-hp. passenger locomotive. Four 1,000-hp. switching units will be constructed by the American Locomotive-General Electric Companies. Deliveries are scheduled to begin next April and be completed the following October. The N. P.'s intention to purchase this equipment was reported in *Railway Age* of May 14, page 108.

The **Texas & Pacific** has ordered 20 diesel-electric locomotive units (six 1,500-hp. freight, six 1,500-hp. road-switching and eight 800-hp. switching) from the Electro-Motive Division of General Motors Corporation for delivery during the first quarter of 1952. Authorization to purchase this equipment, which, when delivered, will bring the T. & P. to 100 per cent dieselization, was reported in last week's *Railway Age*, page 67.

## SIGNALING

The **Department of City Transit of Philadelphia** has awarded a contract to the Union Switch & Signal Co., covering installation of new signal facilities, including an automatic interlocking, on the Locust Street section of the Philadelphia subway. The material involved includes subway-type color-light signals, electro-pneumatic switch machines, plug-in type relays and code transmitters, electro-pneumatic train stops, rectifiers, transformers and housings.

The **Lehigh Valley** has ordered from the General Railway Signal Company equipment to install a type H, class M system at Wilkes-Barre, Pa. The control machine will have a 28-inch panel equipped with 12 indication lights and 4 levers for control of two switch machines and nine signals. Included in this order are model 5D switch machines and type SA searchlight signals.

The **Southern Pacific** has ordered from the Union Switch & Signal Co. material to install automatic signaling on approximately four miles of main line between Roseville, Cal., and Antelope, and a remotely controlled interlocking at Antelope. In addition to the style B-30 control machine, which will be installed at Antelope, the order includes styles H-2 high and dwarf searchlight signals, M-23A dual-control electric switch machines, relays, rectifiers, transformers and housings. Field installation will be handled by railroad forces.

Lord Mountings cushion road shock, reduce noise, protect the smooth functioning of equipment, reduce maintenance costs, add to the comfort and satisfaction of the traveling public.

When you plan new locomotives, new passenger cars, new auxiliary equipment be sure that Lord Mountings are in the drawings and the specifications . . . make them a part of design. No other expenditure you can make will bring as great returns from so small an outlay. Here are some of the places where Lord Mountings will serve you profitably:

- **Relay Panelboards**
- **Wheel-driven Generators**
- **Fans**
- **Vestibule Diaphragms**
- **Air Conditioning Units**
- **Power-driven Generators**
- **Signal Equipment**
- **Communication Equipment**

Write for your copy of the Lord Natural Frequency Chart and of the Vibration Isolation Chart. Designers and engineers will find them of definite value.

*Although defense production is putting a heavy demand on our facilities, LORD will make every effort to supply industrial needs.*

**LORD MANUFACTURING COMPANY • ERIE, PA.**

*Canadian Representative, Railway & Power Engineering Corp. Ltd.*

LORD BONDED RUBBER — Vibration-Control Mountings . . . Bonded-Rubber Parts

Patents Pending

You are invited

to see a practical demonstration of the

# NEW G-B AUTOMATIC SLACK ADJUSTER

in our room at the Congress Hotel during the

## JUNE 1951 AAR MECHANICAL DIVISION MEETINGS

THE G-B AUTOMATIC SLACK ADJUSTER was designed and developed to positively maintain the desired brake cylinder piston travel on railway freight cars (except Hopper type cars) with the least possible alteration to the foundation brake rigging; also to be easy to install . . . simple and safe to release when necessary to apply new shoes . . . sturdy enough to run from one cleaning period to the next without special attention.

You do not need any additional material to install the G-B Slack Adjuster on new cars. Nor is there any need to go between the rails to release the adjuster when applying new brake shoes; you need only pull the handle toward the brake cylinder to full release position while on your feet, outside the rails. No adjustment is necessary after new shoes are applied — adjustment is automatic at the first brake application.

**FOR FULL DETAILS, WRITE FOR BROCHURE TODAY**

G-B MFG CO

**GUSTIN-BACON MANUFACTURING COMPANY**

KANSAS CITY, MO.

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*Also, distributors conveniently located in major cities.*

## SUPPLY TRADE

### Lafayette College Buys St. Louis Car Company

In a transaction involving about $6 million, Lafayette College, Easton, Pa., has purchased the St. Louis Car Company, of St. Louis, Mo., through acquisition of stock formerly owned by Edwin B. Meissner, Sr., and Edwin B. Meissner, Jr., president and executive vice-president, respectively, of the car company.

They have agreed to sell their 86,709 shares of common stock for $60 a share, payable in cash and notes, upon condition that the college offer to buy the other 13,291 outstanding shares on the same terms; and have also agreed to continue in their present positions with the car company until each stockholder is paid in full for his shares.

The college is expected to pay off notes issued for purchase of this stock from earnings of the company. These, for the year ended October 31, 1950, amounted to $367,000, gross. The company paid a dividend of 50 cents per share on its common stock in December 1949 and another of the same amount in December 1950. Prior to 1949 no dividends had been paid since 1931. Although it is being acquired by a tax-exempt institution, it is understood that the company will continue to pay federal, state and city corporation taxes. There will be no changes in the company's present organization.

The purchase was negotiated by the Marquis Foundation, a non-profit corporation established by a group of Lafayette College trustees to acquire business and other property to aid the college. Allan P. Kirby, president of the Alleghany Corporation, is president of the Marquis Foundation; its other members are Arthur A. Blaicher,

**George R. Hettinger, who has been appointed railroad and transport sales representative of the Automatic Transportation Company, Chicago, as reported in last week's *Railway Age*. Mr. Hettinger has been associated with sale of industrial trucks to transportation industries in the Chicago area since 1939**


More Wearing Comfort--
More Willingness to Wear

The NEW WILLSON "800" Series
Chemical Cartridge Respirators

1. Lightweight, molded rubber facepiece—soft, snug-fitting comfort.
2. Resilient, rolled, feathered edge—tight, effective seal.
3. Flexible, molded chin cup—comfortable and secure.
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7. Dual chemical cartridges—absorb and chemically filter gases and vapors in low concentrations. Organic vapor cartridges approved by U. S. Bureau of Mines.
8. Large filtering areas—easy breathing with minimum resistance.

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See your WILLSON Distributor or write us direct.

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# Will you make this profitable decision about car heating systems?

The gentlemen above are voting to switch to the *Honeywell* heating system for their passenger cars.

This decision, we firmly believe, will prove to be very profitable. The Honeywell Car Heating System enables you to make major savings on passenger operations – savings that can run well into seven figures a year! Because it *saves up to 40% on steam.*

This steam saving helps you eliminate losses due to winter-idled cars and to trains made late by "slow orders" for heating. It cuts down on watering stops, reduces heating system inspection to a bare minimum, virtually ends your frozen pipe problem.

You see, this remarkable system requires much less under-car piping than conventional systems. And this small amount of piping almost never freezes, even in severest weather – because steam is exposed to cold air only for brief periods of time.

Moreover, Honeywell Systems make your customers much more comfortable – through better heat distribution and more accurate temperature control.

These facts only outline the money-saving benefits you can expect from the Honeywell Car Heating System. For full information on what it can do for your railroad, call your local Honeywell office. Or write Honeywell, Dept. RA-6-117, Minneapolis 8, Minnesota.

MINNEAPOLIS **Honeywell**

*First in Controls*

of Coggeshall & Hicks, New York; Russell K. Laros, president of the R. K. Laros Silk Company, Bethlehem, Pa.; Thomas J. McInnerney, chairman of the board of the National Dairy Products Corporation, New York; David B. Skillman, attorney, Easton; and Robert L. Warren, president of the Brockway Glass Company, Brockway, Pa. The foundation is said to have put up $1,200,000 to help finance the transaction.

The St. Louis Car Company builds principally lightweight railway, subway, elevated and street cars and trackless trolley buses. Among its recent railway orders were 100 electric multiple-unit cars for the New York Central, described in *Railway Age* of August 5, 1950, page 47.

Edwin P. Meissner, Sr., has been president of St. Louis Car since 1920, and has owned a controlling interest in it since 1925. Edwin P. Meissner, Jr., has been associated with it since his graduation from the University of Pennsylvania in 1940.

**Charles A. Mapp,** sales representative for **Fairbanks, Morse & Co.,** in the Cleveland area, has been appointed district manager of locomotive sales in the Chicago area, succeeding **C. H. Morse, Jr.,** who recently became manager of the service

**Charles A. Mapp**

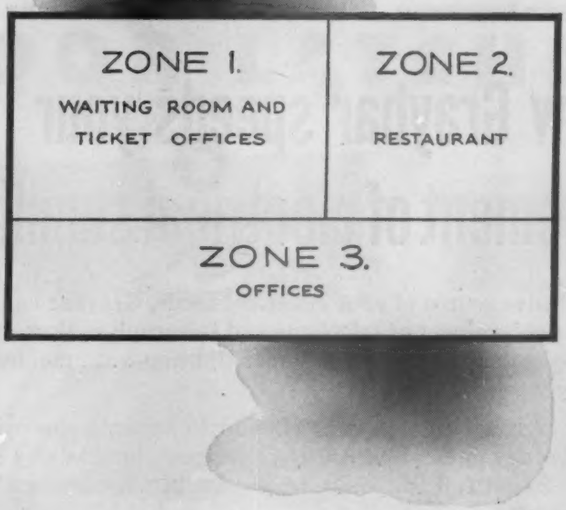
department of the company's locomotive division (*Railway Age*, March 5). A 1943 mechanical engineering graduate of Duke University, Mr. Mapp served in the Navy as lieutenant (j.g.). He joined Fairbanks, Morse in 1947 in the locomotive service department, and later became sales representative in the Cleveland area.

**N. C. L. Brown,** mechanical engineer of the **General Railway Signal Company,** has been appointed assistant to the vice-president.

**Albert H. Johnson,** formerly representative for the **Shippers' Car Line Corporation,** a subsidiary of the American Car & Foundry Co., at Shreveport, La., has been appointed sales manager, Southern district, co-


**Greater comfort, lower fuel bills for stations and offices, too**

*—with Honeywell zone temperature control*




With Zone Control, you can maintain comfortable, uniform temperatures in all parts of your buildings all the time. You see, Zone Control makes it possible to treat each area of a building as a separate heating problem—lets you compensate for differences in occupancy, use, construction and exposure to weather.

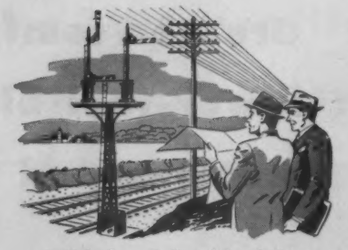
Moreover, you no longer have to overheat or overcool most of a building in order to keep one part comfortable. And you can maintain desired temperatures only in those areas which are occupied at any given time. By eliminating waste in this way, Zone Control helps you save substantially on costly fuel.

Honeywell offers you outdoor or indoor controls; electric, pneumatic or electronic systems. Honeywell's nationwide staff of control experts is available for consultation on choice of equipment, on installation. And Honeywell's service staff is unsurpassed in the industry. For further information, write today to Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minnesota.

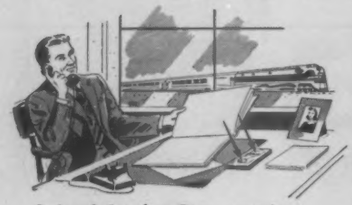
MINNEAPOLIS **Honeywell**

*First in Controls*

1. A nation-wide warehouse system



2. Help from Railroad Specialists



3. Local Graybar Representatives

4. Catalog and quotation service

# How Graybar speeds your procurement of electrical supplies

As an all-inclusive source of your electrical needs, Graybar can help you simplify procurement of telephone and telegraph equipment . . . pole-line supplies . . , indoor and outdoor lighting . . . . motors and power-supply items.

Scarcities of electrical items are bound to occur. Some will be local or temporary, others will be more serious—but, *on any order to Graybar*, you get full advantage of these "shortage beaters".

1. A nation-wide warehouse system that permits day-by-day check on the over-all supply picture, helps anticipate and forestall shortages before they occur.

2. The services of Graybar Railroad Specialists to work closely with you and, when necessary, to procure or to suggest substitutes for electrical items in short supply.

3. Near-by Graybar Representatives to provide up-to-the-minute forecasts of local delivery conditions and material availability.

4. Catalog and quotation service on the more than 100,000 electrical supplies distributed by Graybar.

Make it a point to plan ahead and avoid delivery delays—let Graybar be your electrical materials mobilizer. *Graybar Electric Co., Inc. Executive offices: Graybar Building, New York 17, N. Y.* 140-206

**OFFICES AND WAREHOUSES IN OVER 100 PRINCIPAL CITIES**

incident with the moving of the Southern district sales office from Shreveport to Houston, Tex.

**Philip H. Hatch,** who recently retired as general mechanical superintendent of the New York, New Haven & Hartford (*Railway Age*, April 16, page 83), has joined the transportation divisions of the **General Electric Company,** at Schenectady, N. Y.

The **H. T. Kennedy Company** has moved to 37 Wall street, New York 5.

## CONSTRUCTION

**Atchison, Topeka & Santa Fe.**—Construction of a 21-foot by 50-foot two-story reinforced concrete building for housing C. T. C. equipment at Fresno, Cal., has been covered by a contract to the Harris Construction Company of Fresno. At Hobart yard, Vernon, a storehouse, 40 feet by 100 feet, will be erected by the Wm. P. Neil Company, of Los Angeles.

**Norfolk & Western.**—This road has awarded a contract to the Ogle Construction Company, Chicago, for a reinforced concrete coaling station building at Bluefield, W. Va. Cost, including relocation of tracks and other facilities, will approximate $660,000. The coaling station will provide storage for 2,000 tons of locomotive fuel coal, 150 tons of slack coal for stationary boilers, 150 tons of wet sand and 50 tons of dry sand. Coal or sand will be unloaded from two hopper cars at once at the rate of 200 tons an hour. Construction is scheduled for completion by next January 1.

**North Pennsylvania-Reading.**—The I.C. has authorized the former road to construct, and the latter to operate, a 6.7-mile line in Bucks county, Pa. The line, costing $1,325,000, will extend from a point near Woodbourne to a connection with the industrial spur being constructed by the Pennsylvania at Morrisville to serve the so-called Fairless Works of the United States Steel Corporation. In authorizing construction of the new line from Woodbourne, the commission also gave the Reading authority to acquire trackage rights over the new P.R.R. spur. The Reading will thus provide added rail service to the steel company.

**West Virginia Northern.**—This road has been authorized by Division 4 of the I.C.C. to construct and operate a branch line between Howesville, Va., and a point near Brown's Mills, approximately 5.8 miles. Estimated cost of new line is placed at $256,912, with construction scheduled to begin at once. The line will serve an area of about 7,000 acres of coal land. Ten

# Over 75,000 Hopper Cars

## *Equipped with ENTERPRISE*

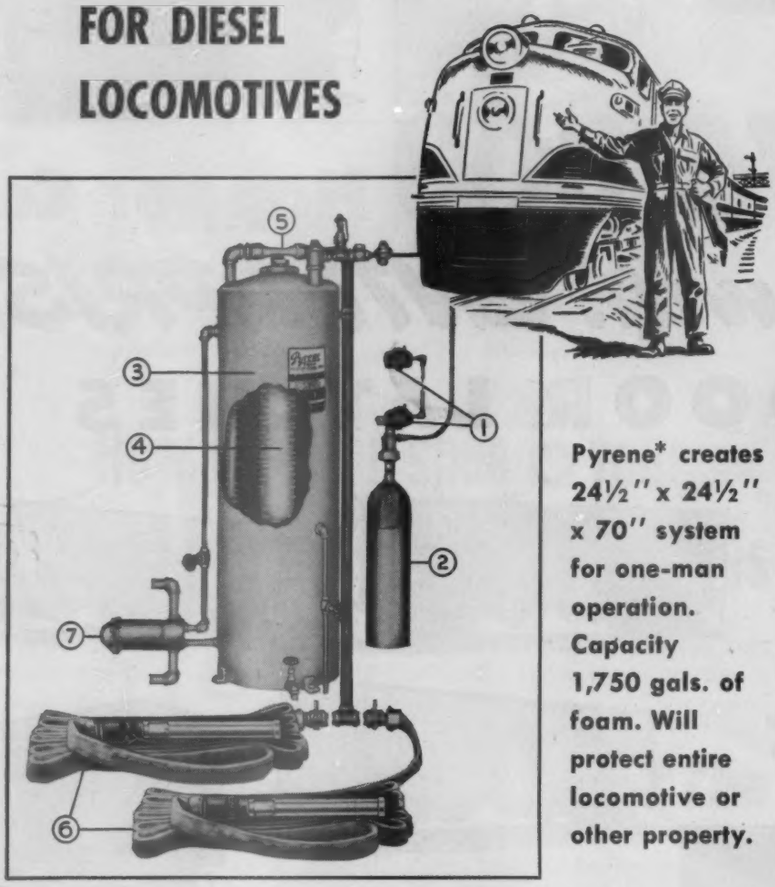
## UNIT DOOR LATCHES

*ENTERPRISE Welcomes to Chicago Members of the Mechanical Division of the A. A. R. for their Annual Meeting June 26-28, 1951*

**ENTERPRISE** RAILWAY EQUIPMENT COMPANY

59 East Van Buren Street · Chicago 5, Illinois

# NEW, EFFICIENT, SELF-CONTAINED AIR FOAM FIRE-FIGHTING UNIT FOR DIESEL LOCOMOTIVES




**Pyrene* creates 24½" x 24½" x 70" system for one-man operation. Capacity 1,750 gals. of foam. Will protect entire locomotive or other property.**

Here is the finest fire protection ever devised for Diesel locomotives! It is entirely self-contained, requires a minimum of space and negligible maintenance. One man can operate it from either side of the cab. Capacity is sufficient for almost any imaginable emergency—up to 1,750 gals. of fire-smothering foam at the rate of 350 gals. per minute.

The system is activated from either of two manual control pull boxes (1) which release pressure from carbon dioxide cylinder (2) to water tank (3). Pyrene Air Foam Compound from tank (4) is drawn into the water stream in the proper amount by foam compound proportioner (5). Discharge of air foam is from Pyrene Playpipe (6). Water tank holds 100 gals. of water and 6 gals. of foam compound. Anti-freeze heat exchanger (7) optional. Total weight of system, fully charged, only 1,600 lbs.

Each Diesel on your road is such an important investment that this relatively inexpensive Pyrene system should be standard operating equipment. Write for further information.

*T.M. Reg. U.S. Pat. Off.

Pyrene AIR FOAM

**PYRENE MANUFACTURING COMPANY**

678 Belmont Avenue Newark 8, New Jersey

9 Grosvenor Gardens, London S.W., 1 • 91 E. Don Roadway, Toronto

Affiliated with C-O-Two Fire Equipment Co


mines are at present being operated in this area, and construction of the line is expected to reduce the cost of moving the coal to the railroad by from 40 to 50 cents a ton.

## FINANCIAL

**Canadian National.**—*Refunding.*—The Canadian government has indicated it will introduce a measure in the House of Commons at Ottawa to provide for refunding of matured, maturing and callable obligations of the Canadian National and for issuance of securities, to be guaranteed by the government, for such refunding up to $200,000,000.

**New York Central.**—*Tax Rebate Denied.*—The New York Central's claim to a $12,521,388 tax rebate, plus interest, from New York City was turned down on June 19. The decision confirmed the state's valuation of the road's right-of-way on Park avenue from 133rd street to Grand Central Terminal, which, the Central contended, had been over-assessed by the state tax commission by $327,804,203 from 1925 to 1951. Although assessed by the state, the tax goes to the city.

### New Securities

**Applications** have been filed with the I.C.C. by:

**WESTERN MARYLAND.**—To assume liability for $3,540,000 of series P equipment truset certificates to finance in part acquisition of 710 freight cars as follows:

| | Description and Builder | Estimated Unit Cost |
|---|---|---|
| 470 | 70-ton gondola cars (Bethlehem Steel Company) | $6,005.36 |
| 100 | 70-ton covered hopper cars (American Car & Foundry Co.) | 6,824.33 |
| 100 | 50-ton box cars (Greenville Steel Car Company) | 6,877.66 |
| 40 | 70-ton flat cars (Greenville) | 6,439.17 |

The application put total cost of the equipment at about $4,452,000. The certificates, bearing interest at three per cent, would be dated July 1; and they would mature in 15 equal annual instalments of $236,000 each, beginning July 1, 1952. They have been sold, subject to commission approval, to Halsey, Stuart & Co., which submitted the most favorable bid—99.52466.

**WILLAMINA & GRAND RONDE.**—To issue three non-interest bearing promissory notes, totaling $600,000, to its parent company, the Long-Bell Lumber Company. The money would be used to finance construction of a 3.5-mile line in Douglas county, Ore.

Division 4 of the I.C.C. has **authorized:**

**CHICAGO GREAT WESTERN.**—To issue promissory notes in the amount of $3,000,000, proceeds from which will be used to provide additional working capital and to pay off two existing notes totaling $1,500,000. The road said more working capital is needed because of continuing expenditures for additions and betterments, expected to total $4,834,000 in 1951. The I.C.C. report also noted that a U. S. District Court in Illinois is expected to issue an order giving the road until July 16 to pay approximately $1,089,312 in existing dividend accruals on C.G.W. cumulative preferred stock. This payment, amounting to $3 a share, is scheduled to be made July 12 to stockholders of record July 7. (See Dividends Declared, this issue, and *Railway Age*, June 4, page 90.)

The new notes, five in all, will be dated the day of issue, and will bear interest at 3½ per cent. They will be secured by C.G.W. first mortgage 4 per cent series A bonds.

**CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.**—To assume liability for $5,300,000 of series NN equipment trust certificates to finance in part five

diesel-electric locomotives and 930 freight-train cars costing an estimated $7,151,170. (*Railway Age*, June 4, page 90.) The certificates, to be dated as of June 1, and will mature in 20 semi-annual installments of $265,00 each, beginning December 1, 1951. Division 4 approved a selling price for the certificates of 99.4178 with interest at 2⅞ per cent — the bid of Halsey, Stuart & Co. and 10 associates — which will make the average annual cost of the proceeds approximately 3 per cent. The certificates were reoffered to the public at prices yielding from 2.2 to 3 per cent, according to maturity.

## Security Price Averages

| | June 26 | Previous week | Last year |
|---|---|---|---|
| Average price of 20 representative railway stocks | 52.96 | 52.74 | 41.49 |
| Average price of 20 representative railway bonds | 92.68 | 93.87 | 91.51 |

## Dividends Declared

Canada Southern.—$1.50†, semiannual, payable August 1 to holders of record June 27.

Canadian Pacific.—common, 75¢, irregular, payable August 1 to holders of record June 22; 4% cumulative preference, 2%*, payable August 1 to holders of record June 29.

Chicago, Burlington & Quincy.—$4, semiannual, payable June 28 to holders of record June 15.

Chicago Great Western.—5% preferred, $3, accumulated, payable July 12 to holders of record July 7.

Cincinnati Inter-Terminal.—4% preferred, $2, semiannual, payable August 1 to holders of record July 20.

Maine Central.—6% prior preferred, $1.50, quarterly, payable July 2 to holders of record June 25.

Northern Central.—$2, semiannual, payable July 16 to holders of record June 29.

Piedmont & Northern.—75¢, quarterly, payable July 20 to holders of record July 5.

Savannah & Atlanta.—5% preferred, $1.25, quarterly, payable July 1 to holders of record June 13.

†Payable in U.S. funds, less 15% Canadian non-residents' tax.

*Less British income tax.

## Investment Publications

[The surveys listed herein are, for the most part, prepared by financial houses for the information of their customers. Knowing that many such surveys contain valuable information, *Railway Age* lists them as a service to its readers, but assumes no responsibility for facts or opinions which they may contain bearing upon the attractiveness of specific securities.]

**Analysts Journal,** Second Quarter, 1951. Published by the New York Society of Security Analysts. Available from Albert P. Squier, New York Institute of Finance, 20 Broad st., New York 5. Single copies, $1.25.

*Railroad Forum* conducted at the fourth annual convention of the National Federation of Financial Analysts Societies.

**Baker, Weeks & Harden,** One Wall st., New York 5.

*General Railroad Review with Special Remarks About Northern Pacific.* May 24.

*Railroad Income Bonds.* June 11.

**H. Hentz & Co.,** 60 Beaver st., New York 4.

*Railroad Income Bonds.* Fortnightly Review, June 11.

**Smith, Barney & Co.,** 14 Wall st., New York 5.

*Kansas City Southern Railway Company, First Mortgage 4s 1975.* Railroad Bulletin No. 61, June 12.

*Railroad Earnings.* First Quarter 1951. May 31.

*Railroad Stock Exchange Suggestion.* Railroad Bulletin No. 60, June 12.

*"There've Been Some Changes Made"*; an adaptation of an address by Walter F. Hahn to the Philadelphia Securities Association, April 12. Railroad Bulletin No. 59, May 25.

**Vilas & Hickey,** 49 Wall st., New York 5.

*Minneapolis, St. Paul & Sault Ste. Marie Railroad Co.* June 18.

*Railroad Income Bonds.* June 1.

**J. R. Williston & Co.,** 115 Broadway, New York 6.

*Current Position of Railroad Securities.* June 6.

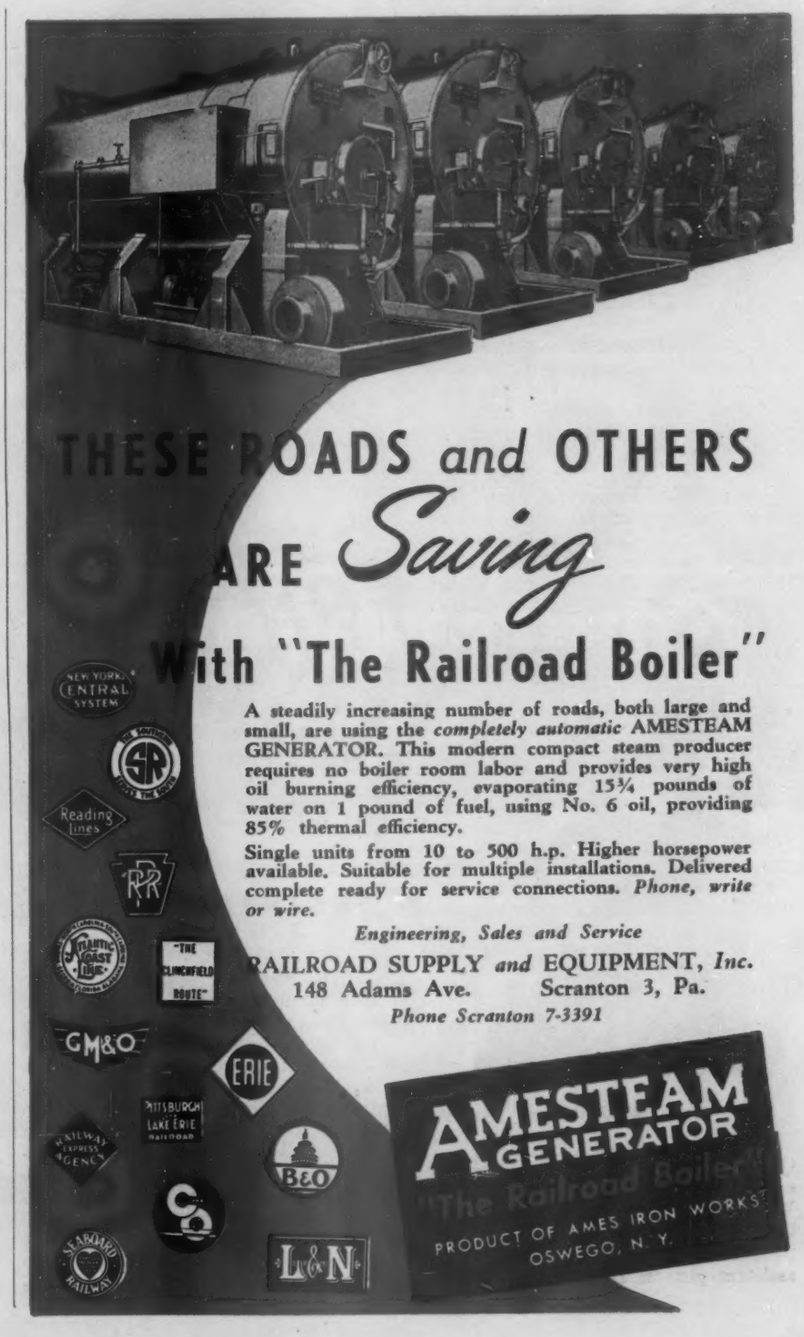
**Wood, Walker & Co.,** 63 Wall st., New York 5.

*Northern Pacific Railway Company.* May 18.

# RAILWAY OFFICERS

### EXECUTIVE

**L. A. Evans,** formerly assistant superintendent on the PENNSYLVANIA at Indianapolis, has been elected vice-



THESE ROADS and OTHERS
ARE Saving
With "The Railroad Boiler"
A steadily increasing number of roads, both large and small, are using the completely automatic AMESTEAM GENERATOR. This modern compact steam producer requires no boiler room labor and provides very high oil burning efficiency, evaporating 15¾ pounds of water on 1 pound of fuel, using No. 6 oil, providing 85% thermal efficiency.
Single units from 10 to 500 h.p. Higher horsepower available. Suitable for multiple installations. Delivered complete ready for service connections. Phone, write or wire.
Engineering, Sales and Service
RAILROAD SUPPLY and EQUIPMENT, Inc.
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AMESTEAM GENERATOR
"The Railroad Boiler"
PRODUCT OF AMES IRON WORKS
OSWEGO, N. Y.

**Frederick H. Baird, general passenger traffic manager of the New York Central System, has been appointed to the newly-created position of assistant vice-president in charge of passenger traffic, with headquarters as before at New York**

president and general manager of the CHICAGO & WESTERN INDIANA and the BELT OF CHICAGO, with headquarters at Chicago.

## TRAFFIC

**J. A. McIsaac,** manager of the sleeping and dining car department of the CANADIAN NATIONAL at Montreal, has been retired on pension, after 41 years of service with that road and its predecessors.

**John W. Fullerton,** assistant freight traffic manager of the Prairie region of the CANADIAN PACIFIC at Winnipeg, has been appointed freight traffic manager of the Eastern region at Toronto, succeeding **Aitken Walker,** who will retire on pension at the end of June. Mr. Fullerton was born at

**John W. Fullerton**

Quebec, Que., and entered railroad service in 1912 with the Grand Trunk Western at Quebec. He joined the C. P. in 1918 and held various positions until 1945 when he was named assistant general freight agent at Toronto. Mr. Fullerton was appointed assistant freight traffic manager at Montreal in 1948, transferring to Winnipeg the following year.

Mr. Walker was born at Glasgow, Scotland, on August 23, 1885, and entered railroad service in October 1898 as junior clerk with the Glasgow,

**Aitken Walker**

Barrhead & Kilmarnock Junction, subsequently going with the Glasgow & South Western. He joined the C. P. in 1911 as a clerk at Winnipeg and, after serving in various other capacities, was appointed general freight agent at Montreal in 1930, transferring to Toronto four years later. On March 1, 1948, Mr. Walker became assistant freight traffic manager at Toronto and in May 1950 he was promoted to freight traffic manager there.

## MECHANICAL

**R. C. Trinker, H. R. Martin** and **J. A. Wetzel** have been appointed special assistants to manager, equipment, of the NEW YORK CENTRAL SYSTEM at New York, with duties to be assigned. Mr. Trinkner had been general inspector of the system at New York; Mr. Martin, assistant master mechanic of the Big Four at Indianapolis, and Mr. Wetzel, assistant master mechanic, lines Buffalo and East, at Syracuse, N. Y.

## ENGINEERING AND SIGNALING

**L. G. Shriver,** senior assistant to chief engineer of the UNION PACIFIC has retired. Succeeding to Mr. Shriver's duties is **T. L. Pidcock,** division engineer at Cheyenne, Wyo., who has been appointed assistant to chief engineer. Mr. Shriver was born at Dexter City, Ohio, May 31, 1881, attended Hiram College, Hiram, Ohio, and began his railroad career with the Pennsylvania as agent and telegraph operator. After serving on two other roads, he joined the U. P. in August 1905 as chief clerk in the engineering department at Salt Lake City, Utah. Transferred to Omaha in 1942, he held positions as assistant to system maintenance engineer and assistant to chief engineer before his appointment as senior assistant to chief engineer in 1948.

Mr. Pidcock started with the U.P. in 1906 in the mechanical department of the Oregon Short Line (a U.P. subsidiary) at Ogden, Utah, moved to Pocatello, Idaho, in 1911, and after service in World War I became chief draftsman on the O.S.L. at Salt Lake City. He was appointed division engineer at that point in 1942, and was transferred to Cheyenne in that capacity the same year.

## PURCHASES & STORES

**W. Boyce,** storekeeper of the CENTRAL OF NEW JERSEY at Communipaw, N. J., has been appointed division storekeeper of that road and the NEW YORK & LONG BRANCH at Elizabethport, N. J., succeeding **J. V. Hanrahan,** who has been appointed supervisor of stores of both roads, with the same headquarters. **D. Bohn** has been appointed diesel storekeeper at Elizabethport, succeeding **W. Bohn,** who succeeds Mr. Boyce at Communipaw.

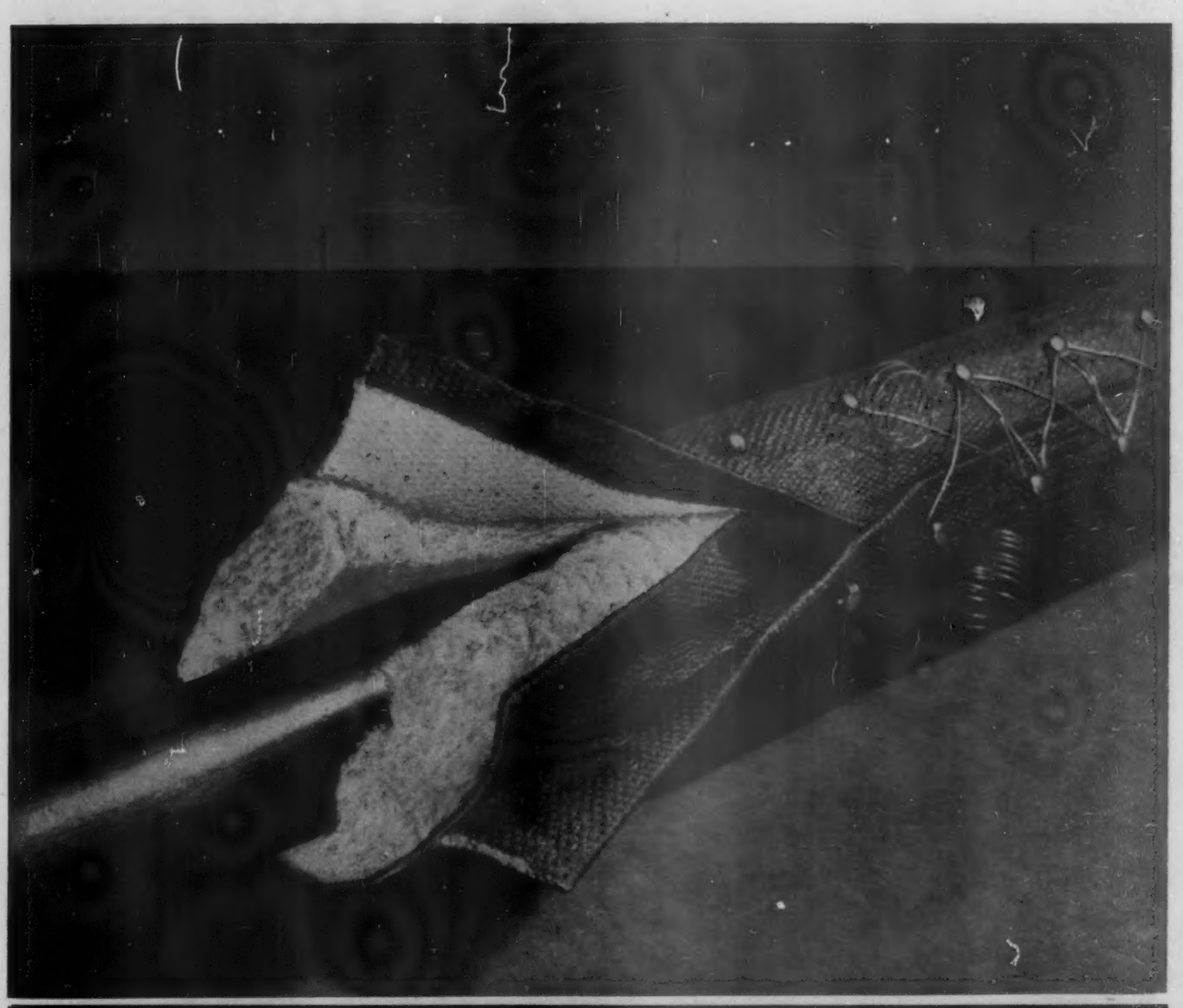
**R. F. Welch** has been appointed general storekeeper of the TEXAS & PACIFIC at Marshall, Tex., succeeding **P. W. Grayson,** who will retire on June 30 at his own request, after 40 years of service with this road.

## OBITUARY

**Luard C. Anderson,** who retired on November 30, 1948, as assistant to vice-president, operations and maintenance, of the NEW YORK CENTRAL SYSTEM, died on June 13 at his home in Larchmont, N. Y., at the age of 71. He had been manager of passenger transportation of the system from 1942 to March 1948.

**L. A. Jones,** chairman of the ALABAMA & VICKSBURG and the VICKSBURG, SHREVEPORT & PACIFIC, died on June 14 at New Orleans, at the age of 92.

**William A. Carlson,** superintendent motive power of the ERIE at Cleveland, died on June 17 while playing golf at the Shaker Country Club. Mr. Carlson was born at Chicago on April 27, 1890, and entered railroad service in June 1906 as machinist helper with the Nickel Plate at Stony Island, Ill., subsequently serving as machinist apprentice, machinist, roundhouse machinist, assistant roundhouse foreman and general foreman. In May 1928 he joined the Erie as general master mechanic at Hornell, N. Y., becoming district master mechanic at Meadville, Pa., the following year. Mr. Carlson was appointed assistant superintendent motive power at Cleveland on October 1, 1943, and superintendent motive power on January 16, 1946.



# UNARCO WOVENSTONE®

## *Lace-on Train Pipe Insulation*

Contributing to passenger comfort on the nation's trains for more than 25 years—Wovenstone is recognized for its high insulating efficiency, rugged construction and long life. These qualities are reflected in the lower cost of delivering steam heat and hot water to the cars. The longer the train, the greater the need for Wovenstone.

UNARCO

**UNION ASBESTOS & RUBBER COMPANY**

332 SOUTH MICHIGAN AVENUE • CHICAGO 4, ILLINOIS

# REVENUES AND EXPENSES OF RAILWAYS

MONTH OF APRIL AND FOUR MONTHS OF CALENDAR YEAR 1951

| Name of road | | Av. mileage operated during period | Operating revenues | | | Operating Expenses | | | | | Operating ratio | Net from railway operation | Railway tax accruals | Net railway operating income | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Maintenance of | | | | | | | | | |
| | | | Freight | Passenger | Total (inc. misc.) | Way and structures | Equipment | Traffic | Transportation | Total | | | | 1951 | 1950 |
| Akron, Canton & Youngstown | April | 171 | 438,886 | 54 | 457,474 | 71,503 | 49,224 | 33,713 | 138,564 | 324,435 | 70.9 | 133,039 | 59,051 | 61,092 | 64,258 |
| | 4 mos. | 171 | 1,760,916 | 256 | 1,829,042 | 264,873 | 180,943 | 131,109 | 548,694 | 1,245,593 | 68.1 | 583,449 | 260,685 | 272,176 | 243,299 |
| Atchison, Topeka & Santa Fe | April | 13,096 | 39,309,747 | 3,711,404 | 46,589,353 | 7,606,069 | 9,840,284 | 1,212,295 | 15,449,761 | 35,948,570 | 77.2 | 10,640,783 | 5,545,874 | 4,345,207 | 3,984,435 |
| | 4 mos. | 13,096 | 153,763,004 | 15,222,057 | 183,059,640 | 26,383,385 | 35,951,812 | 4,608,303 | 60,002,943 | 134,296,842 | 73.4 | 48,762,798 | 27,796,200 | 20,439,899 | 18,011,401 |
| Atlanta & St. Andrews Bay | April | 82 | 289,958 | 1,864 | 300,959 | 34,337 | 17,416 | 8,584 | 59,747 | 133,530 | 44.4 | 167,429 | 90,405 | 49,940 | 53,932 |
| | 4 mos. | 82 | 1,140,074 | 7,811 | 1,178,374 | 137,557 | 78,126 | 31,728 | 235,838 | 540,183 | 45.8 | 638,191 | 340,149 | 188,312 | 202,298 |
| Atlanta & West Point | April | 93 | 281,638 | 42,008 | 365,459 | 55,013 | 62,945 | 16,044 | 166,849 | 325,276 | 89.0 | 40,183 | 21,044 | —857 | —533 |
| | 4 mos. | 93 | 1,149,501 | 195,868 | 1,511,207 | 199,655 | 222,470 | 61,903 | 662,363 | 1,244,066 | 82.3 | 267,141 | 136,804 | 47,459 | 10,940 |
| Western of Alabama | April | 133 | 315,313 | 40,720 | 380,774 | 50,780 | 71,951 | 16,597 | 145,543 | 308,177 | 80.9 | 72,597 | 37,020 | 23,627 | 12,381 |
| | 4 mos. | 133 | 1,279,687 | 192,879 | 1,587,261 | 239,261 | 245,241 | 63,206 | 578,140 | 1,217,055 | 76.7 | 370,206 | 196,714 | 138,017 | 82,919 |
| Atlantic & Danville | April | 205 | 156,511 | ..... | 158,982 | 28,000 | 7,601 | 10,910 | 57,740 | 115,596 | 72.7 | 43,386 | 10,732 | 16,462 | 8,423 |
| | 4 mos. | 205 | 596,571 | ..... | 609,649 | 112,000 | 32,307 | 40,534 | 213,171 | 445,136 | 73.0 | 164,513 | 42,989 | 61,736 | 32,909 |
| Atlantic Coast Line | April | 5,453 | 10,957,147 | 1,715,998 | 13,608,284 | 2,884,751 | 2,638,260 | 339,525 | 5,073,319 | 11,539,693 | 84.8 | 2,068,591 | 1,200,000 | 423,019 | 756,693 |
| | 4 mos. | 5,453 | 43,639,879 | 6,133,451 | 55,748,875 | 12,405,913 | 10,302,645 | 1,351,214 | 20,521,022 | 47,064,957 | 84.4 | 8,683,918 | 5,025,000 | 1,939,673 | 4,346,742 |
| Charleston & Western Carolina | April | 343 | 524,061 | 9,508 | 548,417 | 157,671 | 86,859 | 18,340 | 173,610 | 449,575 | 82.0 | 98,842 | 45,000 | 35,201 | 43,244 |
| | 4 mos. | 343 | 2,022,243 | 40,013 | 2,116,812 | 532,381 | 312,997 | 66,783 | 639,135 | 1,596,039 | 75.4 | 520,773 | 245,000 | 240,130 | 192,554 |
| Baltimore & Ohio | April | 6,188 | 32,644,159 | 2,089,187 | 36,850,490 | 5,166,844 | 8,612,821 | 871,732 | 14,476,229 | 30,592,390 | 83.0 | 6,258,100 | 2,543,308 | 2,805,104 | 3,487,910 |
| | 4 mos. | 6,188 | 126,146,539 | 8,030,613 | 142,033,118 | 17,962,175 | 32,907,845 | 3,261,314 | 58,601,244 | 118,485,115 | 83.4 | 23,548,003 | 9,505,834 | 10,746,217 | 8,802,155 |
| Staten Island Rapid Transit | April | 29 | 229,962 | 46,666 | 282,283 | 56,650 | 36,897 | 1,595 | 140,969 | 264,405 | 93.7 | 17,878 | 35,427 | —29,668 | —56,514 |
| | 4 mos. | 29 | 950,094 | 185,165 | 1,153,535 | 208,331 | 146,409 | 5,444 | 579,403 | 1,058,773 | 91.8 | 94,762 | 143,104 | —105,613 | —216,629 |
| Bangor & Aroostook | April | 602 | 1,035,373 | 33,155 | 1,103,580 | 186,015 | 185,589 | 13,231 | 237,807 | 690,344 | 62.5 | 413,236 | 208,127 | 187,430 | 512,296 |
| | 4 mos. | 602 | 4,064,641 | 142,426 | 4,350,118 | 708,660 | 667,409 | 52,861 | 1,059,403 | 2,730,621 | 62.8 | 1,619,497 | 779,105 | 676,473 | 1,440,809 |
| Bessemer & Lake Erie | April | 212 | 2,416,602 | 939 | 2,439,476 | 173,274 | 744,785 | 18,370 | 502,452 | 1,519,870 | 62.3 | 919,606 | 534,214 | 468,276 | 261,987 |
| | 4 mos. | 212 | 6,701,677 | 3,523 | 6,797,165 | 677,827 | 2,480,408 | 73,457 | 1,825,589 | 5,382,140 | 79.2 | 1,415,025 | 1,284,784 | 1,146,218 | 234,616 |
| Boston & Maine | April | 1,702 | 5,727,778 | 841,799 | 7,213,893 | 1,257,788 | 1,251,301 | 116,719 | 3,122,206 | 6,058,724 | 84.0 | 1,155,169 | 532,836 | 242,567 | 350,766 |
| | 4 mos. | 1,702 | 22,744,263 | 3,651,475 | 28,963,364 | 4,862,700 | 4,866,986 | 440,662 | 12,641,091 | 24,087,234 | 83.2 | 4,876,130 | 2,421,627 | 944,581 | 882,610 |
| Cambria & Indiana | April | 35 | 127,708 | ..... | 127,743 | 14,343 | 89,732 | 125 | 29,867 | 140,354 | 109.9 | —12,611 | 54,096 | 46,799 | 71,182 |
| | 4 mos. | 35 | 583,543 | ..... | 583,682 | 48,641 | 340,601 | 564 | 110,410 | 537,258 | 92.0 | 46,424 | 275,353 | 245,975 | 121,744 |
| Canadian Pacific Lines in Maine | April | 234 | 613,130 | 44,240 | 682,541 | 97,873 | 80,041 | 7,008 | 209,815 | 407,409 | 59.7 | 275,132 | 27,647 | 194,297 | 50,655 |
| | 4 mos. | 234 | 2,728,641 | 175,805 | 3,004,924 | 354,031 | 375,232 | 27,947 | 989,087 | 1,796,133 | 59.8 | 1,208,791 | 111,644 | 807,188 | 326,306 |
| Canadian Pacific Lines in Vermont | April | 90 | 206,441 | 12,052 | 234,449 | 51,281 | 29,397 | 5,816 | 117,025 | 211,351 | 90.1 | 23,098 | 13,573 | —42,421 | —76,378 |
| | 4 mos. | 90 | 759,912 | 53,010 | 883,028 | 195,060 | 116,355 | 23,077 | 457,827 | 821,940 | 93.1 | 61,088 | 48,589 | —207,174 | —289,908 |
| Central of Georgia | April | 1,815 | 3,179,624 | 250,503 | 3,687,605 | 683,390 | 659,900 | 122,846 | 1,652,235 | 3,348,851 | 90.8 | 338,754 | 168,020 | 79,690 | 75,724 |
| | 4 mos. | 1,815 | 12,884,064 | 1,033,137 | 14,972,813 | 2,728,208 | 2,506,319 | 471,433 | 6,411,819 | 12,895,638 | 86.1 | 2,077,175 | 1,164,762 | 519,445 | 311,713 |
| Central of New Jersey | April | 410 | 2,813,252 | 477,534 | 3,527,967 | 429,568 | 528,373 | 57,810 | 1,847,586 | 3,029,378 | 85.9 | 498,589 | 389,147 | —260,149 | —455,324 |
| | 4 mos. | 410 | 11,238,780 | 1,823,341 | 14,028,018 | 1,835,275 | 2,478,008 | 219,351 | 7,429,238 | 12,617,338 | 89.9 | 1,410,680 | 1,578,610 | —1,642,270 | —1,730,355 |
| Central of Pennsylvania | April | 210 | 1,421,249 | 5,970 | 1,473,425 | 188,688 | 353,087 | 24,624 | 469,092 | 1,073,969 | 72.9 | 399,456 | 60,617 | 634,229 | 802,124 |
| | 4 mos. | 210 | 5,588,849 | 28,515 | 6,037,733 | 669,542 | 1,569,131 | 98,257 | 1,974,730 | 4,473,706 | 74.1 | 1,564,027 | 269,283 | 2,465,559 | 2,808,218 |
| Central of Vermont | April | 422 | 784,000 | 51,000 | 898,000 | 151,079 | 174,247 | 18,087 | 375,860 | 760,677 | 84.7 | 137,323 | 41,912 | 17,276 | 132,053 |
| | 4 mos. | 422 | 3,163,000 | 209,000 | 3,598,000 | 566,543 | 638,098 | 63,027 | 1,548,071 | 2,977,720 | 82.8 | 620,280 | 181,790 | 202,266 | 79,677 |
| Chesapeake & Ohio | April | 5,116 | 27,115,207 | 695,813 | 29,217,705 | 3,976,519 | 5,847,596 | 570,748 | 9,944,067 | 21,499,085 | 73.6 | 7,718,620 | 4,362,292 | 3,549,167 | 4,789,641 |
| | 4 mos. | 5,116 | 104,703,361 | 2,791,863 | 111,879,940 | 15,150,162 | 21,723,148 | 2,211,888 | 38,864,079 | 82,483,137 | 73.7 | 29,396,803 | 18,024,343 | 13,176,952 | 10,093,266 |
| Chicago & Eastern Illinois | April | 886 | 2,199,459 | 244,693 | 2,684,739 | 354,808 | 432,155 | 110,666 | 1,036,307 | 2,096,141 | 78.1 | 588,598 | 241,900 | 249,388 | 159,208 |
| | 4 mos. | 886 | 8,856,643 | 1,034,075 | 10,887,010 | 1,397,596 | 1,640,612 | 437,357 | 4,158,557 | 8,235,225 | 75.6 | 2,651,785 | 1,048,600 | 1,075,317 | 735,761 |
| Chicago & Illinois Midland | April | 130 | 826,930 | 181 | 840,630 | 99,731 | 166,798 | 27,572 | 219,313 | 554,514 | 66.0 | 286,116 | 158,261 | 128,845 | 262,195 |
| | 4 mos. | 130 | 3,093,448 | 817 | 3,154,531 | 396,709 | 632,723 | 113,834 | 860,906 | 2,154,216 | 68.3 | 1,000,315 | 501,133 | 454,941 | 494,964 |
| Chicago & North Western | April | 7,913 | 13,425,549 | 1,563,961 | 16,632,754 | 2,632,777 | 3,080,111 | 329,483 | 7,876,426 | 14,699,504 | 88.4 | 1,933,250 | 1,086,868 | 363,377 | —495,000 |
| | 4 mos. | 7,920 | 49,420,722 | 6,617,297 | 62,734,549 | 9,506,155 | 12,267,769 | 1,270,338 | 30,855,182 | 57,020,382 | 90.9 | 5,714,167 | 4,226,425 | —249,653 | —2,210,777 |
| Chicago, Burlington & Quincy | April | 8,822 | 18,029,060 | 1,355,923 | 21,277,503 | 3,340,621 | 3,258,690 | 507,244 | 7,382,800 | 15,235,675 | 71.6 | 6,041,828 | 3,213,216 | 2,222,077 | 1,499,327 |
| | 4 mos. | 8,822 | 73,124,417 | 5,254,232 | 85,852,151 | 9,953,894 | 12,758,083 | 1,754,860 | 30,826,327 | 58,220,046 | 67.8 | 27,632,105 | 13,664,024 | 11,589,028 | 7,315,078 |
| Chicago Great Western | April | 1,474 | 2,737,933 | 30,847 | 2,900,033 | 441,473 | 437,558 | 101,901 | 927,416 | 1,992,911 | 68.7 | 907,122 | 321,169 | 287,466 | 278,293 |
| | 4 mos. | 1,474 | 10,625,342 | 118,183 | 11,400,108 | 1,717,747 | 1,619,600 | 403,679 | 3,867,345 | 7,924,642 | 69.5 | 3,475,466 | 1,076,592 | 1,084,350 | 1,171,947 |
| Chicago, Indianapolis & Louisville | April | 541 | 1,569,311 | 65,919 | 1,735,379 | 306,590 | 292,727 | 89,167 | 605,349 | 1,396,167 | 80.5 | 339,212 | 104,944 | 118,683 | 145,345 |
| | 4 mos. | 541 | 6,327,293 | 323,195 | 7,061,009 | 1,195,351 | 1,114,076 | 342,552 | 2,466,141 | 5,516,826 | 78.1 | 1,544,183 | 560,432 | 519,389 | 445,874 |
| Chicago, Milwaukee, St. Paul & Pacific | April | 10,671 | 17,818,832 | 1,331,807 | 21,371,198 | 2,758,594 | 4,610,939 | 478,998 | 9,470,806 | 18,364,218 | 85.9 | 3,006,980 | 1,642,000 | 801,942 | 1,014,572 |
| | 4 mos. | 10,671 | 68,886,452 | 5,565,639 | 82,685,367 | 10,243,649 | 17,213,865 | 1,772,310 | 37,557,145 | 70,792,768 | 85.6 | 11,892,599 | 6,452,000 | 3,009,362 | 32,954 |
| Chicago, Rock Island & Pacific | April | 7,925 | 14,034,050 | 1,513,311 | 16,924,032 | 2,031,434 | 2,708,768 | 473,083 | 6,550,203 | 12,550,130 | 74.2 | 4,373,902 | 1,887,575 | 1,403,323 | 1,727,216 |
| | 4 mos. | 7,925 | 54,704,872 | 6,686,385 | 66,809,109 | 7,453,859 | 10,605,183 | 1,891,887 | 26,300,705 | 49,453,221 | 74.0 | 17,355,888 | 7,735,048 | 5,950,288 | 5,128,424 |
| Chicago, St. Paul, Minn. & Omaha | April | 1,617 | 2,289,105 | 159,421 | 2,657,906 | 477,672 | 477,838 | 68,046 | 1,548,919 | 2,701,232 | 101.6 | —43,326 | 185,672 | —480,631 | —24,990 |
| | 4 mos. | 1,617 | 8,770,883 | 704,691 | 10,296,110 | 1,595,618 | 1,768,811 | 252,544 | 6,016,371 | 10,137,872 | 98.5 | 158,238 | 725,771 | —1,304,416 | —513,488 |
| Clinchfield | April | 317 | 1,870,906 | 1,027 | 1,882,224 | 300,244 | 339,662 | 39,632 | 396,038 | 1,110,410 | 59.0 | 771,814 | 190,393 | 739,895 | 799,752 |
| | 4 mos. | 317 | 8,120,553 | 4,856 | 8,167,618 | 1,078,916 | 1,291,944 | 154,961 | 1,762,032 | 4,419,424 | 54.1 | 3,748,194 | 757,304 | 3,555,021 | 2,328,839 |

# REVENUES AND EXPENSES OF RAILWAYS

MONTH OF APRIL AND FOUR MONTHS OF CALENDAR YEAR 1951

| Name of road | | Av. mileage operated during period | Operating revenues: Freight | Passenger | Total (inc. misc.) | Operating Expenses: Maintenance of Way and structures | Maintenance of Equipment | Traffic | Transportation | Total | Operating ratio | Net from railway operation | Railway tax accruals | Net railway operating income 1951 | Net railway operating income 1950 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Colorado & Southern | April | 739 | 1,105,700 | 67,234 | 1,275,851 | 135,209 | 203,569 | 27,892 | 480,990 | 901,670 | 70.7 | 374,181 | 209,209 | 119,351 | 68,427 |
| | 4 mos. | 739 | 4,282,532 | 339,520 | 5,013,266 | 548,870 | 748,329 | 107,207 | 1,896,108 | 3,527,621 | 70.4 | 1 485,645 | 823,366 | 482,569 | 295,743 |
| Ft. Worth & Denver City | April | 804 | 1,483,861 | 139,496 | 1,760,090 | 266,123 | 262,928 | 57,282 | 672,317 | 1,348,542 | 76.6 | 411,548 | 130,350 | 150,595 | 195,423 |
| | 4 mos. | 804 | 5,722,075 | 621,138 | 6,926,635 | 917,489 | 950,662 | 206,645 | 2,609,593 | 5,051,811 | 72.9 | 1,874,824 | 646,379 | 733,778 | 863,488 |
| Colorado & Wyoming | April | 41 | 148,498 | ..... | 262,291 | 103,241 | 33,216 | 1,105 | 110,263 | 259,942 | 99.1 | 2.349 | —10,756 | 11,150 | 16,254 |
| | 4 mos. | 41 | 578,982 | ..... | 1,070,035 | 154,252 | 102,439 | 4,375 | 440,238 | 747,704 | 69.8 | 322,331 | 176,906 | 141,807 | 74,128 |
| Columbus & Greenville | April | 168 | 201,846 | —234 | 207,704 | 44,562 | 28,880 | 3,032 | 56,838 | 150,276 | 72.4 | 57,428 | 34,274 | 26,982 | 7,684 |
| | 4 mos. | 168 | 714,038 | —210 | 741,519 | 163,731 | 113,918 | 13,652 | 213,663 | 575,284 | 77.6 | 166,235 | 102,333 | 79,403 | 46,713 |
| Delaware & Hudson | April | 793 | 4,370,601 | 118,399 | 4,643,347 | 598,600 | 969,235 | 77,343 | 1,792,885 | 3,643,956 | 78.5 | 999,391 | 597,811 | 454,530 | 363,397 |
| | 4 mos. | 793 | 18,024,473 | 588,531 | 19,128,335 | 2,156,004 | 3,876,002 | 300,605 | 7,352,840 | 14,489,634 | 75.7 | 4,638,701 | 2,672,191 | 2,141,919 | 1,402,215 |
| Delaware, Lackawanna & Western | April | 966 | 5,869,327 | 755,987 | 7,189,999 | 807,711 | 1,419,299 | 162,501 | 3,375,391 | 6,023,568 | 83.8 | 1,166,431 | 634,632 | 538,753 | 726,229 |
| | 4 mos. | 968 | 22,889,156 | 3,203,616 | 28,319,752 | 2,939,620 | 5,448,749 | 635,944 | 13,314,807 | 23,354,896 | 82.5 | 4,964,856 | 3,130,546 | 1,770,948 | 1,827,876 |
| Denver & Rio Grande Western | April | 2,334 | 5,194,433 | 257,063 | 5,644,231 | 765,006 | 1,061,974 | 159,803 | 1,876,445 | 4,142,231 | 73.4 | 1,502,000 | 775,063 | 696,188 | 556,957 |
| | 4 mos. | 2,347 | 21,449,917 | 1,098,817 | 23,376,251 | 2,485,060 | 4,374,439 | 644,900 | 7,732,437 | 16,303,316 | 69.7 | 7,072,935 | 3,656,938 | 3,451,190 | 1,919,562 |
| Detroit & Mackinac | April | 232 | 196,156 | —24 | 201,657 | 40,000 | 19,393 | 3,183 | 34,098 | 105,374 | 52.3 | 96,283 | 54,817 | 36,121 | 39,340 |
| | 4 mos. | 232 | 681,089 | 934 | 709,591 | 160,000 | 81,246 | 11,987 | 142,945 | 431,063 | 60.7 | 278,528 | 165,885 | 100,928 | 109,940 |
| Detroit & Toledo Shore Line | April | 50 | 613,446 | ..... | 616,573 | 65,012 | 59,579 | 15,173 | 229,484 | 383,224 | 62.2 | 233,349 | 72,766 | 55,836 | 94,522 |
| | 4 mos. | 50 | 2,697,070 | ..... | 2,710,152 | 285,019 | 225,176 | 56,106 | 849,135 | 1,465,657 | 54.1 | 1,244,495 | 508,386 | 311,506 | 420,498 |
| Detroit, Toledo & Ironton | April | 464 | 1,493,435 | 349 | 1,583,292 | 236,373 | 236,719 | 29,123 | 429,469 | 978,048 | 61.8 | 605,244 | 311,834 | 265,138 | 350,422 |
| | 4 mos. | 464 | 6,507,701 | 1,474 | 6,791,796 | 777,854 | 1,017,327 | 110,221 | 1,760,645 | 3,855,173 | 56.8 | 2,936,623 | 1,519,829 | 1,230,345 | 1,210,191 |
| Duluth, Missabe & Iron Range | April | 565 | 3,928,693 | 959 | 4,464,012 | 579,479 | 647,149 | 9,335 | 1,477,873 | 2,797,008 | 62.7 | 1,667,004 | 330,730 | 1,414,302 | —1,048,650 |
| | 4 mos. | 565 | 5,502,818 | 5,093 | 6,158,659 | 2,450,032 | 2,786,061 | 35,344 | 3,570,825 | 9,155,059 | 148.7 | —2,996,400 | 604,905 | —3,214,607 | —5,407,450 |
| Duluth, South Shore & Atlantic | April | 539 | 677,894 | 5,944 | 712,640 | 99,166 | 120,089 | 23,454 | 275,987 | 536,846 | 75.3 | 175,794 | 25,793 | 123,761 | 129,764 |
| | 4 mos. | 539 | 2,511,637 | 28,196 | 2,634,391 | 386,632 | 453,763 | 84,284 | 1,090,041 | 2,084,908 | 79.1 | 549,483 | 103,258 | 282,402 | 118,352 |
| Duluth, Winnipeg & Pacific | April | 175 | 480,000 | 900 | 487,200 | 70,679 | 61,998 | 4,639 | 199,869 | 343,804 | 70.6 | 143,396 | 35,547 | 52,991 | 26,362 |
| | 4 mos. | 175 | 1,873,000 | 3,100 | 1,900,000 | 256,359 | 256,414 | 17,824 | 785,867 | 1,342,023 | 70.6 | 557,977 | 139,624 | 187,933 | —39,895 |
| Elgin, Joliet & Eastern | April | 238 | 3,641,834 | 8 | 4,427,539 | 469,659 | 715,549 | 32,621 | 1,602,878 | 2,961,944 | 66.9 | 1,466,595 | 520,511 | 285,671 | 858,263 |
| | 4 mos. | 238 | 13,897,153 | 11 | 17,348,154 | 1,566,032 | 2,692,326 | 124,735 | 6,286,955 | 11,233,228 | 64.8 | 6,114,926 | 2,670,409 | 1,148,194 | 2,906,990 |
| Erie | April | 2,245 | 12,938,375 | 524,042 | 14,460,128 | 1,987,316 | 2,441,214 | 348,993 | 6,075,086 | 11,535,791 | 79.8 | 2,924,337 | 1,393,132 | 1,081,279 | 1,345,959 |
| | 4 mos. | 2,245 | 52,068,603 | 2,289,978 | 58,093,682 | 6,556,867 | 8,999,017 | 1,393,269 | 24,038,031 | 43,657,675 | 75.1 | 14,436,007 | 6,784,146 | 5,740,151 | 4,759,339 |
| Florida East Coast | April | 571 | 2,341,534 | 652,555 | 3,285,691 | 383,488 | 454,446 | 71,441 | 1,136,793 | 2,267,724 | 69.0 | 1,017,967 | 281,082 | 518,678 | 367,046 |
| | 4 mos. | 571 | 8,177,222 | 3,244,078 | 12,569,546 | 1,424,297 | 1,829,466 | 278,210 | 4,395,418 | 8,714,098 | 69.3 | 3,855,448 | 1,126,769 | 2,016,467 | 1,957,123 |
| Georgia Railroad | April | 323 | 708,488 | 67,631 | 826,956 | 128,826 | 126,243 | 31,428 | 329,904 | 653,653 | 79.0 | 173,303 | 39,127 | 142,020 | 113,725 |
| | 4 mos. | 323 | 2,774,197 | 264,673 | 3,234,595 | 477,514 | 493,424 | 122,574 | 1,253,513 | 2,491,383 | 77.0 | 743,212 | 147,685 | 633,883 | 322,766 |
| Georgia & Florida | April | 359 | 262,038 | 12 | 268,056 | 83,582 | 31,489 | 17,147 | 81,749 | 226,319 | 84.4 | 41,737 | 16,236 | 10,603 | —34,653 |
| | 4 mos. | 359 | 1,123,850 | 46 | 1,146,163 | 326,138 | 128,520 | 70,916 | 342,765 | 918,092 | 80.1 | 228,071 | 64,961 | 78,739 | —113,076 |
| Grand Trunk Western | April | 971 | 4,207,000 | 178,000 | 4,676,000 | 723,594 | 934,747 | 78,692 | 1,974,870 | 3,859,580 | 82.5 | 816,420 | 280,302 | 209,500 | 836,492 |
| | 4 mos. | 973 | 17,417,000 | 790,000 | 19,754,000 | 2,394,648 | 3,547,705 | 283,992 | 8,401,948 | 15,264,266 | 77.3 | 4,489,734 | 1,072,751 | 2,473,079 | 1,911,273 |
| Canadian Natl. Lines in New Eng. | April | 172 | 190,000 | 3,500 | 227,000 | 59,474 | 48,682 | 2,771 | 133,418 | 265,024 | 116.8 | —38,024 | 22,746 | —114,396 | —121,563 |
| | 4 mos. | 172 | 770,000 | 23,500 | 953,000 | 206,177 | 186,990 | 10,890 | 536,449 | 1,006,776 | 105.6 | —53,776 | 90,984 | —319,421 | —420,340 |
| Great Northern | April | 8,316 | 18,625,226 | 981,625 | 21,008,133 | 3,295,996 | 3,561,622 | 392,902 | 7,316,491 | 15,327,547 | 73.0 | 5,680,586 | 1,873,488 | 3,443,860 | —1,547,442 |
| | 4 mos. | 8,316 | 58,322,578 | 3,900,383 | 66,824,945 | 12,328,892 | 13,798,889 | 1,448,582 | 26,942,305 | 57,490,508 | 86.0 | 9,334,437 | 6,249,627 | 2,765,082 | —6,566,405 |
| Green Bay & Western | April | 224 | 331,118 | ..... | 335,833 | 89,807 | 27,477 | 21,260 | 81,396 | 237,017 | 70.6 | 98,816 | 48,164 | 47,645 | 43,793 |
| | 4 mos. | 224 | 1,414,944 | ..... | 1,438,600 | 312,809 | 140,614 | 80,979 | 339,711 | 935,011 | 65.0 | 503,589 | 236,316 | 234,075 | 178,296 |
| Gulf, Mobile & Ohio | April | 2,898 | 6,288,747 | 395,497 | 7,182,692 | 1,229,628 | 1,278,509 | 243,877 | 2,195,769 | 5,282,466 | 73.5 | 1,900,226 | 899,718 | 701,042 | 593,848 |
| | 4 mos. | 2,898 | 24,903,691 | 1,673,962 | 28,423,787 | 4,504,816 | 5,490,685 | 1,001,600 | 8,769,567 | 21,141,078 | 74.4 | 7,282,709 | 3,281,414 | 2,679,594 | 2,075,091 |
| Illinois Terminal | April | 462 | 803,822 | 77,449 | 1,005,907 | 149,622 | 157,290 | 42,145 | 412,968 | 809,211 | 80.5 | 196,696 | 100,749 | 80,696 | 90,948 |
| | 4 mos. | 462 | 3,026,595 | 322,919 | 3,770,672 | 554,342 | 588,794 | 149,992 | 1,553,929 | 3,043,414 | 80.7 | 727,258 | 379,770 | 275,645 | 233,091 |
| Illinois Central | April | 6,539 | 19,883,108 | 1,743,433 | 23,933,694 | 3,852,688 | 4,121,332 | 509,537 | 8,925,261 | 18,432,783 | 77.0 | 5,500,911 | 2,955,665 | 1,921,656 | 2,118,961 |
| | 4 mos. | 6,539 | 80,233,783 | 7,349,586 | 96,502,752 | 14,881,915 | 17,226,412 | 2,006,637 | 36,262,787 | 74,485,324 | 77.2 | 22,017,428 | 8,265,113 | 11,753,222 | 8,312,607 |
| Kansas City Southern | April | 891 | 3,327,498 | 108,046 | 3,755,627 | 405,077 | 475,535 | 79,870 | 1,096,167 | 2,164,596 | 57.6 | 1,591 031 | 734,000 | 654,077 | 598,771 |
| | 4 mos. | 891 | 13,264,560 | 549,606 | 15,028,802 | 1,502,585 | 1,801,279 | 316,742 | 4,308,132 | 8,372,690 | 55.7 | 6,656,112 | 3,175,000 | 2,643,940 | 2,840,325 |
| Kansas, Oklahoma & Gulf | April | 327 | 611,918 | 584 | 615,898 | 63,951 | 38,167 | 19,943 | 130,810 | 274,845 | 44.6 | 341,053 | 168,935 | 132,856 | 56,322 |
| | 4 mos. | 327 | 2,261,252 | 2,325 | 2,281,872 | 177,480 | 142,299 | 74,926 | 461,549 | 939,539 | 41.2 | 1,342,333 | 628,147 | 564,001 | 332,984 |
| Lake Superior & Ishpeming | April | 156 | 344,871 | 35 | 418,874 | 48,710 | 51,101 | 2,175 | 109,574 | 220,387 | 52.6 | 198,487 | 28,875 | 188,599 | —102,414 |
| | 4 mos. | 156 | 548,848 | 72 | 634,776 | 167,937 | 202,484 | 8,036 | 269,774 | 683,580 | 107.7 | —48,804 | 109,035 | —90,758 | —410,248 |
| Lehigh & Hudson River | April | 96 | 263,973 | ..... | 267,323 | 42,839 | 22,749 | 10,923 | 83,286 | 170,404 | 63.7 | 96,919 | 45,733 | 36,138 | 26,079 |
| | 4 mos. | 96 | 1,066,772 | ..... | 1,083,740 | 152,555 | 99,591 | 41,759 | 325,509 | 660,024 | 60.9 | 423,716 | 202,156 | 165,937 | 50,341 |
| Lehigh & New England | April | 191 | 754,736 | ..... | 763,729 | 125,128 | 118,018 | 12,010 | 184,276 | 471,616 | 61.8 | 292,113 | 167,671 | 163,231 | 167,233 |
| | 4 mos. | 191 | 2,596,088 | ..... | 2,624,698 | 365,893 | 456,604 | 46,837 | 724,178 | 1,733,680 | 66.1 | 891,018 | 525,184 | 515,120 | 447,953 |
| Lehigh Valley | April | 1,229 | 5,671,893 | 256,981 | 6,191,842 | 858,286 | 1,358,169 | 135,740 | 2,422,047 | 5,014,575 | 81.0 | 1,177,267 | 570,375 | 532,286 | 812,600 |
| | 4 mos. | 1,229 | 22,491,766 | 1,177,608 | 24,720,490 | 3,081,503 | 5,424,582 | 544,580 | 10,129,660 | 20,150,578 | 81.5 | 4,569,912 | 2,160,719 | 2,109,996 | 1,684,654 |
| Long Island | April | 365 | 1,241,900 | 3,044,705 | 4,528,475 | 656,226 | 860,447 | 11,101 | 2,376,378 | 4,084,379 | 90.2 | 444,096 | 489,023 | —297,545 | —176,320 |
| | 4 mos. | 365 | 4,763,155 | 10,386,328 | 16,036,542 | 2,383,733 | 3,341,361 | 47,432 | 9,223,774 | 15,597,394 | 97.3 | 439,148 | 1,918,089 | —2,567,459 | —1,971,739 |

(Table continued on second left-hand page)

# prevent corrosion reduce freezing with R·M·C Rail Joint Packing

END CORROSION WITH R.M.C. PACKING

New RMC Rail Joint Packing — the result of years of experience and recent intensive research is now available.

The compound of graded expanded Vermiculite, heavy lubricating oil and inhibitors makes a perfect joint packing. Vermiculite, inert chemically, non-hygroscopic, has anti friction qualities equal to graphite.

Oil is retained over a long period, and any small amount of moisture present is neutralized by a special combination of inhibitors.

RAILWAY MAINTENANCE CORP.

PITTSBURGH 30, PENNSYLVANIA

# WHEREVER YOU USE WOOD..

**IN THE NORTH,** poles must resist the tremendous weight of frequent sleet storms. Avoid preservatives which *weaken* the wood. Barrett* Coal-Tar Creosote allows poles to retain their maximum strength, and helps to keep the poles at their best and hold the lines aloft.

**IN THE SOUTH,** prolonged high temperatures cause light-bodied preservatives to leach and evaporate from the wood rapidly, thus exposing the wood to termite attack and decay. Barrett Coal-Tar Creosote, heavier bodied and of lower volatility, prevents this condition. It stays in the wood longer under all conditions—doesn't "run out" on the job.

**IN THE DESERT,** crossties broom, shatter and split from extreme dryness and heat. Solutions made with Barrett Coal-Tar Creosote retard this, and also reduce mechanical wear of crossties through their lubricating action on the wood fibers. In poles, heavy treatment with Barrett Coal-Tar Creosote substantially reduces checking and splitting.

**IN THE SWAMPS,** forces of decay are almost at their maximum of destructive power. High moisture content and infection from other decaying wood and debris are ever-present menaces. Poles properly treated with Barrett Coal-Tar Creosote have survived under swamp conditions for years.

**IN FRESH WATER,** many preservatives leach out of wood. Barrett Coal-Tar Creosote resists this leaching action. Being only negligibly soluble in water, it is the preferred preservative for use on submerged wood structures, or those exposed to the powerful action of rapidly flowing water.

**IN SALT WATER,** marine wood-borers give a preservative its severest test. Of hundreds of preservatives that have been tried through the years, *Coal-Tar* Creosote is the only one that has proved consistently effective against teredos, limnoria and other salt-water enemies of wood.

**THE BARRETT DIVISION**
**ALLIED CHEMICAL & DYE CORPORATION**
**40 Rector Street, New York 6, N. Y.**

**Only coal-tar creosote wood preservative has been used long enough and widely enough to have proved its effectiveness under all conditions.**

Use Barrett*

*Reg. U. S. Pat. Off.

# COAL TAR CREOSOTE



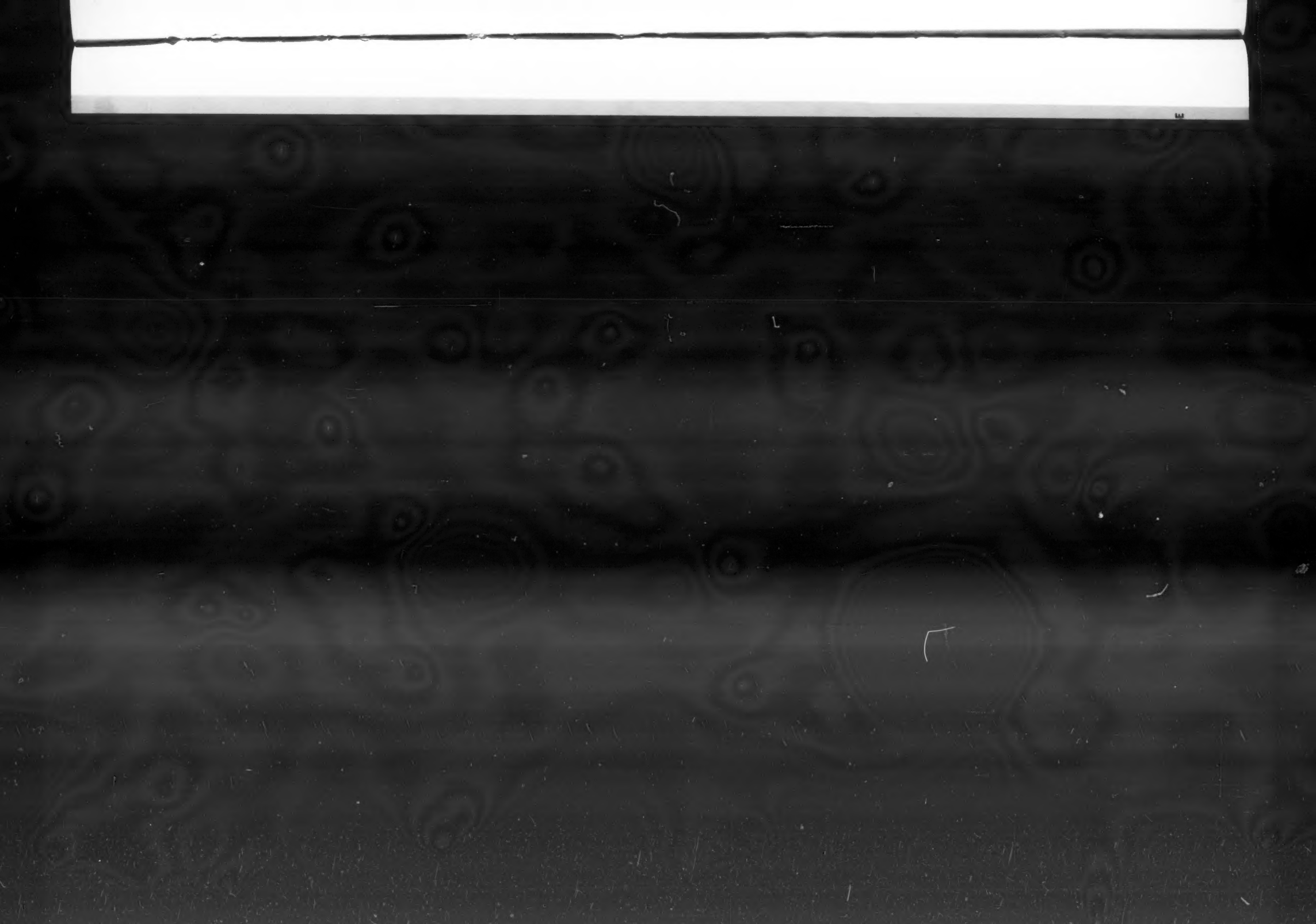
*For additional information, use postcard on pages 119, 120*

# REVENUES AND EXPENSES OF RAILWAYS

MONTH OF APRIL AND FOUR MONTHS OF CALENDAR YEAR 1951

| Name of road | | Av. mileage operated during period | Operating revenues | | | Operating Expenses | | | | | Operating ratio | Net from railway operation | Railway tax accruals | Net railway operating income | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Maintenance of | | | | | | | | | |
| | | | Freight | Passenger | Total (inc. misc.) | Way and structures | Equipment | Traffic | Transportation | Total | | | | 1951 | 1950 |
| Louisiana & Arkansas | April | 756 | 1,821,300 | 63,801 | 1,950,502 | 396,911 | 232,865 | 65,547 | 522,777 | 1,284,949 | 65.9 | 665,553 | 302,226 | 228,994 | 308,459 |
| | 4 mos. | 756 | 7,246,301 | 256,001 | 7,783,288 | 1,456,891 | 893,911 | 259,690 | 2,106,405 | 4,998,962 | 64.2 | 2,784,326 | 1,354,753 | 910,057 | 1,249,075 |
| Louisville & Nashville | April | 4,778 | 16,136,383 | 1,078,653 | 18,282,441 | 2,737,105 | 4,112,409 | 315,820 | 6,878,304 | 14,699,870 | 80.4 | 3,582,571 | 2,494,373 | 1,502,493 | 1,442,560 |
| | 4 mos. | 4,778 | 64,511,652 | 4,766,626 | 73,547,593 | 10,201,575 | 15,167,127 | 1,285,934 | 28,205,242 | 57,476,241 | 78.1 | 16,071,352 | 11,293,421 | 6,992,852 | 4,687,850 |
| Maine Central | April | 981 | 1,911,787 | 105,164 | 2,147,376 | 390,357 | 373,053 | 17,734 | 731,597 | 1,594,861 | 74.3 | 552,515 | 290,121 | 224,505 | 139,869 |
| | 4 mos. | 981 | 8,026,155 | 437,724 | 8,952,617 | 1,490,310 | 1,502,125 | 79,631 | 3,026,655 | 6,387,791 | 71.4 | 2,564,826 | 1,293,829 | 1,037,461 | 727,063 |
| Midland Valley | April | 334 | 192,307 | 10 | 195,183 | 41,767 | 21,100 | 4,115 | 59,840 | 134,127 | 68.7 | 61,056 | 18,158 | 30,684 | —11,518 |
| | 4 mos. | 334 | 706,946 | 35 | 717,527 | 153,511 | 63,625 | 16,302 | 219,817 | 482,909 | 67.3 | 234,618 | 88,184 | 103,205 | 84,001 |
| Minneapolis & St. Louis | April | 1,406 | 1,698,685 | 5,666 | 1,778,190 | 337,428 | 293,629 | 102,595 | 577,548 | 1,422,271 | 80.0 | 355,919 | 169,981 | 82,299 | 46,516 |
| | 4 mos. | 1,406 | 6,644,080 | 51,140 | 6,935,509 | 1,189,523 | 1,063,341 | 443,831 | 2,322,326 | 5,466,802 | 78.8 | 1,468,707 | 777,045 | 429,085 | 302,139 |
| Minneapolis, St. Paul & S. Ste. Marie | April | 3,224 | 3,124,904 | 62,448 | 3,365,137 | 555,007 | 636,593 | 72,769 | 1,348,171 | 2,733,666 | 81.2 | 631,471 | 228,112 | 353,502 | —176,486 |
| | 4 mos. | 3,224 | 10,343,570 | 257,515 | 11,168,319 | 2,150,515 | 2,585,754 | 279,155 | 5,173,229 | 10,653,204 | 95.4 | 515,115 | 847,918 | —410,763 | —1,085,595 |
| Mississippi Central | April | 148 | 245,153 | —35 | 249,275 | 49,457 | 26,670 | 13,041 | 57,192 | 154,323 | 61.9 | 94,952 | 43,859 | 40,762 | 16,608 |
| | 4 mos. | 148 | 842,081 | —135 | 858,527 | 167,806 | 110,217 | 51,876 | 228,350 | 595,830 | 69.4 | 262,697 | 113,253 | 98,670 | 57,479 |
| Missouri-Illinois | April | 172 | 403,674 | 178 | 409,009 | 54,347 | 64,464 | 7,193 | 108,366 | 238,558 | 58.3 | 170,451 | 113,373 | 65,706 | 54,202 |
| | 4 mos. | 172 | 1,645,622 | 654 | 1,674,401 | 230,704 | 251,461 | 31,294 | 438,594 | 976,690 | 58.3 | 697,711 | 466,278 | 265,203 | 250,246 |
| Missouri-Kansas-Texas Lines | April | 3,243 | 5,578,676 | 379,728 | 6,511,920 | 949,223 | 914,706 | 251,443 | 2,438,953 | 4,885,382 | 75.0 | 1,626,538 | 751,658 | 592,177 | 538,051 |
| | 4 mos. | 3,243 | 22,404,991 | 1,983,751 | 26,655,119 | 3,522,570 | 3,795,519 | 951,163 | 9,954,278 | 19,510,190 | 73.2 | 7,144,929 | 3,398,522 | 2,579,758 | 2,154,256 |
| Missouri Pacific | April | 6,960 | 16,462,278 | 867,663 | 19,028,389 | 3,102,611 | 3,890,552 | 434,235 | 7,470,697 | 15,506,620 | 81.5 | 3,521,769 | 1,469,664 | 1,654,520 | 1,602,503 |
| | 4 mos. | 6,960 | 65,930,055 | 3,828,854 | 76,501,190 | 12,215,515 | 14,923,251 | 1,752,628 | 29,477,610 | 60,845,947 | 79.5 | 15,655,243 | 6,427,676 | 7,430,597 | 6,397,080 |
| Gulf Coast Lines | April | .... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ... | ..... | ..... | ..... | ..... |
| | 4 mos. | .... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ... | ..... | ..... | ..... | ..... |
| International-Great Northern | April | 1,104 | 2,839,502 | 165,181 | 3,248,796 | 705,273 | 572,689 | 57,624 | 1,284,732 | 2,747,759 | 84.6 | 501,037 | 133,267 | 207,220 | 240,538 |
| | 4 mos. | 1,104 | 10,423,293 | 926,671 | 12,385,738 | 2,671,186 | 2,100,387 | 212,214 | 4,881,281 | 10,400,550 | 84.0 | 1,985,188 | 562,224 | 875,937 | 1,180,911 |
| Monongahela | April | 170 | 830,832 | —9 | 833,574 | 88,430 | 79,495 | 1,076 | 261,455 | 442,017 | 53.0 | 391,557 | 18,741 | 222,361 | 104,518 |
| | 4 mos. | 170 | 2,839,141 | —10 | 2,854,734 | 333,618 | 335,441 | 4,491 | 1,010,776 | 1,718,936 | 60.2 | 1,135,798 | 212,425 | 350,929 | —47,158 |
| Montour | April | 51 | 230,543 | ..... | 231,050 | 22,405 | 88,787 | 935 | 88,613 | 210,705 | 91.2 | 20,345 | 49,671 | 38,875 | 40,399 |
| | 4 mos. | 51 | 834,366 | ..... | 836,747 | 65,987 | 327,161 | 3,469 | 349,668 | 784,005 | 93.7 | 52,742 | 162,409 | 132,185 | 132,754 |
| Nashville, Chatt. & St. Louis | April | 1,049 | 2,801,060 | 175,404 | 3,255,382 | 613,824 | 493,160 | 114,137 | 1,118,337 | 2,460,752 | 75.6 | 794,630 | 423,063 | 378,206 | 304,706 |
| | 4 mos. | 1,049 | 10,832,156 | 722,469 | 12,624,005 | 2,007,334 | 1,827,334 | 451,550 | 4,536,699 | 9,291,335 | 73.6 | 3,332,670 | 1,764,035 | 1,581,492 | 1,235,222 |
| New York Central | April | 10,727 | 49,981,436 | 8,486,010 | 65,730,068 | 8,547,592 | 14,132,830 | 932,688 | 30,180,167 | 56,885,691 | 86.5 | 8,844,377 | 4,748,910 | 2,154,278 | 2,438,124 |
| | 4 mos. | 10,727 | 195,329,078 | 36,416,731 | 259,178,042 | 34,295,931 | 56,379,609 | 4,114,090 | 124,734,167 | 231,939,292 | 89.5 | 27,238,750 | 19,790,490 | —209,393 | 1,483,480 |
| Pittsburgh & Lake Erie | April | 221 | 3,904,323 | 72,562 | 4,149,245 | 528,126 | 1,157,428 | 72,085 | 1,413,369 | 3,380,617 | 81.5 | 768,628 | 851,599 | 832,240 | 491,818 |
| | 4 mos. | 221 | 14,862,104 | 330,627 | 15,980,624 | 1,936,325 | 4,530,633 | 289,575 | 5,862,368 | 13,441,266 | 84.1 | 2,539,358 | 2,892,680 | 2,771,958 | 1,954,347 |
| New York, Chicago & St. Louis | April | 2,192 | 12,643,433 | 155,344 | 13,188,140 | 1,462,331 | 2,344,288 | 320,528 | 4,479,620 | 9,049,748 | 68.6 | 4,138,392 | 1,861,378 | 1,960,077 | 2,169,061 |
| | 4 mos. | 2,192 | 49,725,818 | 653,925 | 51,881,105 | 5,934,454 | 8,770,086 | 1,241,630 | 18,416,006 | 36,101,252 | 69.6 | 15,779,853 | 7,168,661 | 6,892,502 | 7,319,645 |
| New York, New Haven & Hartford | April | 1,794 | 7,804,327 | 3,796,992 | 12,803,163 | 1,979,984 | 2,138,458 | 186,055 | 5,570,612 | 10,508,016 | 82.1 | 2,295,147 | 910,000 | 495,087 | 853,259 |
| | 4 mos. | 1,794 | 30,852,194 | 14,927,461 | 50,754,621 | 7,375,102 | 8,324,922 | 713,596 | 22,371,907 | 41,358,924 | 81.5 | 9,395,697 | 3,605,000 | 2,254,809 | 3,054,840 |
| New York Connecting | April | 21 | 277,713 | ..... | 291,381 | 88,085 | 18,761 | ..... | 86,357 | 196,186 | 67.3 | 95,195 | 65,085 | 29,029 | 88,934 |
| | 4 mos. | 21 | 1,058,992 | ..... | 1,099,241 | 319,796 | 58,119 | ..... | 262,390 | 650,844 | 59.2 | 448,397 | 267,092 | 260,510 | 242,407 |
| New York, Ontario & Western | April | 542 | 587,544 | —81 | 612,959 | 106,698 | 90,929 | 25,446 | 279,877 | 535,141 | 87.3 | 77,818 | 37,254 | —23,139 | — 75,625 |
| | 4 mos. | 542 | 2,282,829 | 153 | 2,386,094 | 386,731 | 343,086 | 101,102 | 1,114,516 | 2,067,027 | 86.6 | 319,067 | 145,108 | —94,225 | —391,414 |
| New York, Susquehanna & Western | April | 120 | 441,923 | 38,773 | 502,023 | 56,181 | 57,195 | 7,187 | 201,599 | 347,015 | 69.2 | 155,008 | 46,260 | 61,640 | 10,969 |
| | 4 mos. | 120 | 1,610,274 | 159,419 | 1,845,158 | 207,246 | 208,186 | 32,291 | 772,828 | 1,322,995 | 71.7 | 522,163 | 156,926 | 204,379 | 152,384 |
| Norfolk & Western | April | 2,135 | 15,513,391 | 391,614 | 16,572,823 | 2,315,018 | 3,355,935 | 265,202 | 4,956,612 | 11,485,522 | 69.3 | 5,087,301 | 3,580,005 | 2,382,599 | 3,044,146 |
| | 4 mos. | 2,135 | 59,128,941 | 1,805,160 | 63,544,338 | 8,866,277 | 13,426,633 | 1,103,371 | 19,699,730 | 45,434,799 | 71.5 | 18,109,539 | 13,360,114 | 8,858,341 | 6,832,280 |
| Norfolk Southern | April | 643 | 960,246 | ..... | 980,409 | 185,465 | 111,459 | 46,734 | 301,615 | 709,496 | 72.4 | 270,913 | 140,852 | 88,110 | 42,182 |
| | 4 mos. | 643 | 3,583,931 | 29 | 3,677,204 | 661,330 | 447,054 | 183,543 | 1,193,649 | 2,759,487 | 75.0 | 917,717 | 465,840 | 286,423 | 183,276 |
| Northern Pacific | April | 6,887 | 12,987,962 | 514,584 | 14,420,601 | 1,980,925 | 2,726,194 | 268,267 | 5,350,579 | 10,955,703 | 76.0 | 3,464,898 | 1,816,692 | 1,951,940 | 400,233 |
| | 4 mos. | 6,887 | 43,522,646 | 2,305,254 | 49,390,291 | 7,541,010 | 10,825,398 | 1,049,080 | 20,595,505 | 42,560,482 | 86.2 | 6,829,809 | 5,318,380 | 3,335,309 | —2,537,191 |
| Northwestern Pacific | April | 331 | 929,173 | 1,602 | 956,335 | 222,087 | 97,243 | 4,906 | 436,270 | 779,150 | 81.5 | 177,185 | 52,649 | 39,746 | 32,073 |
| | 4 mos. | 331 | 3,357,215 | 12,593 | 3,462,537 | 922,606 | 386,268 | 17,837 | 1,595,013 | 2,987,989 | 86.3 | 474,548 | 199,021 | —12,060 | 11,808 |
| Oklahoma City-Ada-Atoka | April | 132 | 99,939 | 5 | 100,971 | 24,138 | 4,611 | 1,778 | 20,497 | 55,469 | 54.9 | 45,502 | 20,026 | 10,400 | 5,600 |
| | 4 mos. | 132 | 380,437 | —66 | 384,311 | 81,416 | 19,566 | 6,595 | 87,309 | 209,847 | 54.6 | 174,464 | 77,453 | 46,495 | 20,120 |
| Pennsylvania | April | 10,127 | 65,941,791 | 11,968,185 | 85,635,227 | 10,516,444 | 22,417,228 | 1,310,777 | 36,964,174 | 74,453,027 | 86.9 | 11,182,200 | 5,508,815 | 4,018,171 | 5,009,844 |
| | 4 mos. | 10,127 | 246,915,955 | 49,458,115 | 325,275,583 | 38,727,953 | 85,887,356 | 5,140,090 | 149,249,972 | 291,753,500 | 89.7 | 33,522,083 | 20,958,917 | 6,332,344 | 12,840,947 |
| Pennsylvania-Reading Seashore Lines | April | 365 | 610,968 | 128,118 | 773,292 | 203,736 | 96,469 | 9,661 | 581,449 | 932,328 | 120.6 | —159,036 | 95,846 | —391,631 | —595,743 |
| | 4 mos. | 367 | 2,248,094 | 447,529 | 2,837,530 | 931,761 | 368,755 | 37,224 | 2,193,404 | 3,680,737 | 129.7 | —843,207 | 379,738 | —1,729,584 | —2,469,610 |

(Table continued on second left-hand page)



# LITERATURE and PAMPHLETS Offered by Railway Age Advertisers

Following is a compilation of free literature and pamphlets offered by advertisers in the four June issues of RAILWAY AGE. Circle the number or numbers on the card below to receive the additional literature desired.

**302. Diesel Locomotive Air Horns**
*Westinghouse Air Brake Co.* Descriptive leaflet #2472-1 explains in full the F-Major tone Diesel Locomotive horn.

**303. Fork Truck**
*Baker Industrial Truck Div. The Baker-Raulang Co.* Bulletin 1327 gives the facts on the new Baker Type FS 2000 pound fork truck.

**304. Battery Motive-Power**
*Electric Storage Battery Company.* New Exide-Ironclad Battery Motive-Power Catalog, Form 5161, describes the battery's potential.

**305. Bolts**
*Russell, Burdsall & Ward Bolt and Nut Co.* Specially prepared report "The Effect of Various Fasteners on the Fatigue Strength of a Structural Joint".

**306. Suspended Car Light**
*The Pyle-National Co.* New bulletin describes the Pyle-National Anchorlite, the suspended inside and underside illuminator.

**307. Diesel Lubricants**
*Ashland Oil & Refining Company.* Complete information available on the Ashland line of special diesel lubricants.

**308. Storage Batteries**
*Gould-National Batteries, Inc.* Booklet on complete Gould Plus-Performance Plan is designed to help conserve battery power.

**309. One-Man Grain Doors**
*Signode Steel Strapping Co.* Pamphlet #36 presents the Association of American Railroad's approval of these one-piece, one-man freight car grain doors.

**310. Vibrator Converter**
*Cornell-Dubilier Electric Corp.* Complete technical data on the Cornell-Dubilier vibrator converter as used on radio equipped diesel locomotives with 75 volt control.

**311. Solid Journal Bearings**
*Magnus Metal Corp. subs. of National Lead Co.* Booklet "Facts" gives information regarding the A.A.R. solid journal bearings.

**312. "Where's your car of freight?"**
*Atchison, Topeka & Santa Fe Railway.* The Santa Fe's Red Ball Information Service for locating freight cars described in folder.

**313. Steel Rolling Doors**
*The Kinnear Manufacturing Co.* New Kinnear Door Catalog has details and general door information on steel rolling doors.

**314. Fork Lift Truck**
*Towmotor Corporation.* The brochure "Handling Materials Illustrated" is filled with facts on the Towmotor Mass Handling methods.

**315. Rubber-Tired Off-Track Switcher**
*The Frank G. Hough Co.* Job Study #18 is a complete picture-and-word report on the uses of Payloader Switchers by a large brewery.

**316. Plastic Flashlight**
*Gits Molding Corporation.* Samples and prices of the Gits line of plastic flashlights.

**317. Cleaners**
*Dearborn Chemical Company.* Complete information on the Dearborn line of cleaners for every railroad need.

**318. Rust Protective Finished Steel**
*Armco Steel Corporation.* Complete data on Armco Zincgrip-Paintgrip Steel with a mill-applied Bonderized finish.

**319. Recorders**
*Barco Manufacturing Company.* New bulletin "Barco Recorders for Diesel, Steam, and Electric Locomotives in Passenger, Freight and Switching Service".

**320. Flame-Hardening**
*Oxweld Railroad Service Company.* Booklet F-5422 discusses flame-hardening principles as they apply to railroads.

**321. Masonite Hardboards**
*Masonite Corporation.* Complete information on how Masonite hardboards are used to reduce maintenance.

**322. Radiography**
*Eastman Kodak Company.* Booklet available on this important function of photography—"Radiography as a Foundry Tool".

**323. Communication Equipment**
*Automatic Electric Sales Corporation.* Complete information on any of the complete line of communications equipment—telephones, switches, relays, voice frequency repeaters, etc. *Please specify.*

**324. Dictating Machine**
*Thomas A. Edison, Inc.* New descriptive booklet, "Line on Televoice" describes the Televoicewriter—dictating instrument.

**325. Air Foam Fire Protection**
*Pyrene Manufacturing Company.* New Pyrene Air Foam catalog is a valuable reference piece on every type air foam equipment.

**326. Tie Dowelling Machine**
*Graham Tie Dowel Service Co.* Bulletin DM-1 describes tie dowelling machine for applying dowels in one or both tie ends.

**327. Paper Cups**
*United States Envelope Co.* Full particulars on economical way of putting water cup services in cabs and cabooses.

*(Continued first column on reverse side)*

# Additional Product Information

This is a complete list of products mentioned in the advertisements in this issue. For more data on any product shown, circle the page number on the reply cards below, fill in and mail. *Note:* If the advertiser mentions more than one product, or if more than one ad appears on the page, *write in* the name of the product you are interested in.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First Class Permit No. 153 (Sec. 34.9, P.L.&R.), New York, N.Y.

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**RAILWAY AGE**
**30 Church Street**
*Reader Service Dept.* **New York 7, New York**

RAILWAY AGE June 25, 1951

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☐ Literature Only ☐ Send Representative ☐ Price Data

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20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36
37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53
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On page ....., I want data on .....only.
product (s)

Name & Title .....

Company .....

Address .....

.....

## LITERATURE & PAMPHLETS

**328. Diesel "Enginator" Power Plants**
*Waukesha Motor Company.* Bulletin 1496 describes the Waukesha Diesel "Enginator" 25KW power plant and points out uses.

**329. Air Dump Car**
*Differential Steel Car Company.* Full story offered on the operation and use of the Differential Air Dump Car.

**330. Teletype**
*Teletype Corporation. Subs. of Western Electric Co.* Booklet "We wanted to improve our relaying operations" describes Union Pacific's new Teletype relaying equipment.

**331. Resins—Railroad Car Coatings**
*Bakelite Co. Div. of Union Carbide & Carbon Corp.* List of formulators available from which Vinylite Resin data is obtainable.

**332. Pins and Bushings**
*Ex-Cell-O Corporation.* Catalog 32381 lists standard types and sizes of Ex-Cell-O pins and bushings.

**333. Journal Box Visualizer**
*Hyatt Bearings Div. General Motors Corp.* The journal box visualizer shows ease of maintenance of Hyatt journal boxes.

**334. Freight Car Truck**
*National Malleable & Steel Castings Co.* National C-1 Truck Circular 5150 describes the "lading-conscious" truck.

**335. Cement Composition Boxcar Flooring**
*F. E. Schundler Co., Inc.* Brochure gives facts about Plastinail, the new oxychloride cement composition—a nailable boxcar flooring.

**336. Locomotive Brake Feed Valve**
*Westinghouse Air Brake Co.* Catalog No. 2060 gives data on the new Westinghouse D-24-B feed valve.

**337. Automatically Operated Grade Crossing Signals**
*Western Railroad Supply Company.* Brochure 748 RA-6 "Grade Crossing Safety is Your Business" explains Western's grade crossing signals.

**338. Wheeled Portable Fire Extinguisher**
*C-O-Two Fire Equipment Company.* Complete information on the new fire killer—the Dry Chemical wheeled portable fire extinguisher.

**339. Cork Freight Car Insulation**
*Dednox Incorporated.* Facts on Dednox cork freight car insulation's economy and efficiency in use.

**340. Freight Car Coating**
*J. W. Mortell Company.* Circular on Railway Insulmat, the 3-purpose coating used for interior walls of all types cars.

**341. Automatic Slack Adjuster**
*Gustin-Bacon Mfg. Co.* Brochure gives full details of the new G-B Automatic Slack Adjuster.

**342. Packing Retainer**
*Spring Packing Corporation.* Full information on the new 1951 Hold-Rite Packing Retainer.

**343. Automatic End Door Openers**
*National Pneumatic Co., Inc.* Publication #1063 gives full information on NP Automatic End Door Openers.

**344. Retarder System & Automatic Switching**
*General Railway Signal Company.* Pamphlet #695 describes the one-man complete-control G-R-S Retarder System and Automatic Switching.

**345. Tamping Machines**
*The Matisa Equipment Corp.* Full details on Matisa precision tamping machines—track maintenance equipment.

**346. Circuit Breakers**
*Westinghouse Electric Corp.* The Westinghouse circuit breakers are described in bulletin B-4081.

**347. Posting Interpreter (Office Machine)**
*Remington Rand Inc.* Complete 19" x 23" chart, SPTM 4182, and full information on this new machine permitting high speed daily posting.

**348. Vibration Control**
*Lord Manufacturing Company.* Two items of special interest to designers and engineers: National Frequency Chart and Vibration Isolation Chart.

**349. Rust Preventative**
*Rust-Oleum Corporation.* New catalog describes rust preventative for rolling stock, metal buildings, bridges, signal equipment.

**350. Brake Beam**
*Buffalo Brake Beam Company.* Bulletin 6401 describes and pictures the new Truslock #18 solid truss brake beam with quick-change brake head.

**351. Friction Draft Gear**
*National Malleable and Steel Castings Company.* Report No. 950 on AAR Five and Twelve Year Tests (taken from the annual report of the AAR Committee on Couplers and Draft Gears).

**352. Tapered Roller Bearings**
*Timken Roller Bearing Company.* Additional information on the new use of bearings for straight axle journals and integral box side frames.

**353. Electric Decimal Tabulation**
*International Business Machines.* Booklet on "Electric Decimal Tabulation" gives information on this statistical typing machine.

**354. Zone Temperature Control.**
*Minneapolis-Honeywell Regulator Co.* Information on zone control for maintaining uniform temperatures in all parts of buildings.

**355. Car Heating Control**
*Minneapolis-Honeywell Regulator Co.* Full information on what benefits can be expected with Honeywell Car Heating System.

**356. Diesel Locomotive Fire-Fighter**
*Pyrene Manufacturing Co.* Information on the new air foam fire-fighting system for diesel locomotives—esp. Pyrene Air Foam Compound.

**357. Grease**
*Master Lubricants Company.* Engineering data on the M-1 special Lubriko grease for railroads.

**358. Weed Control System**
*National Aluminate Corporation.* Detailed information on Nalco H-170 spray weed control and the complete Nalco System, including the Weed Control Cars.

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**RAILWAY AGE**
**30 Church Street**
*Reader Service Dept.* **New York 7, New York**

RAILWAY AGE June 25, 1951

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| 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 |
| 54 | 89 | 91 | 92 | 93 | 94 | 97 | 99 | 100 | 101 | 102 | 103 | 104 | 105 | 106 | 107 | 108 |
| 109 | 110 | 111 | 113 | 116 | 117 | 121 | 123 | 124 | 125 | 126 | 127 | 128 | 129 | 130 | | |

Items Numbered:

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 302 | 303 | 304 | 305 | 306 | 307 | 308 | 309 | 310 | 311 | 312 | 313 | 314 | 315 | 316 | 317 | 318 |
| 319 | 320 | 321 | 322 | 323 | 324 | 325 | 326 | 327 | 328 | 329 | 330 | 331 | 332 | 333 | 334 | 335 |
| 336 | 337 | 338 | 339 | 340 | 341 | 342 | 343 | 344 | 345 | 346 | 347 | 348 | 349 | 350 | 351 | 352 |
| 353 | 354 | 355 | 356 | 357 | 358 | | | | | | | | | | | |

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product (s)

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# REVENUES AND EXPENSES OF RAILWAYS

MONTH OF APRIL AND FOUR MONTHS OF CALENDAR YEAR 1951

| Name of road | | Av. mileage operated during period | Operating revenues | | | Operating Expenses | | | | | | Net from railway operation | Railway tax accruals | Net railway operating income | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Maintenance of | | | | | | | | | |
| | | | Freight | Passenger | Total (inc. misc.) | Way and structures | Equipment | Traffic | Transportation | Total | Operating ratio | | | 1951 | 1950 |
| Pittsburg & Shawmut | April | 97 | 197,449 | ..... | 198,216 | 35,296 | 54,410 | 3,287 | 54,167 | 157,600 | 79.5 | 40,616 | 5,717 | 37,142 | 52,860 |
| | 4 mos. | 97 | 798,098 | ..... | 803,896 | 97,427 | 228,439 | 13,695 | 221,032 | 594,756 | 74.0 | 209,140 | 47,007 | 155,247 | 186,842 |
| Pittsburgh & West Virginia | April | 132 | 716,229 | ..... | 724,562 | 139,663 | 184,351 | 51,761 | 198,036 | 599,418 | 82.7 | 125,144 | 86,109 | 108,039 | 143,195 |
| | 4 mos. | 132 | 2,776,541 | ..... | 2,818,002 | 500,332 | 651,997 | 196,499 | 788,273 | 2,243,274 | 79.6 | 574,728 | 369,724 | 462,005 | 409,704 |
| Reading | April | 1,313 | 9,552,488 | 555,269 | 10,751,977 | 1,619,996 | 2,691,480 | 135,594 | 4,192,152 | 8,980,123 | 83.5 | 1,771,854 | 999,650 | 868,907 | 1,237,758 |
| | 4 mos. | 1,314 | 37,216,143 | 2,297,493 | 42,175,446 | 5,577,030 | 9,003,350 | 547,239 | 17,271,595 | 33,729,638 | 80.0 | 8,445,808 | 4,558,188 | 3,942,019 | 3,458,792 |
| Richmond, Fredericksburg & Potomac | April | 118 | 1,526,274 | 528,286 | 2,336,701 | 313,086 | 287,558 | 22,552 | 735,440 | 1,513,698 | 64.8 | 823,003 | 410,188 | 284,205 | 282,741 |
| | 4 mos. | 118 | 5,807,191 | 2,425,003 | 9,226,932 | 1,033,012 | 1,096,029 | 81,345 | 2,986,618 | 5,762,894 | 62.5 | 3,464,038 | 1,757,741 | 1,293,914 | 955,016 |
| Rutland | April | 407 | 388,488 | 19,477 | 480,501 | 90,554 | 83,204 | 15,516 | 264,166 | 475,667 | 99.0 | 4,834 | 31,696 | —48,619 | —22,961 |
| | 4 mos. | 407 | 1,487,370 | 99,744 | 1,868,211 | 345,287 | 340,983 | 59,548 | 1,029,967 | 1,862,368 | 99.7 | 5,843 | 133,579 | —207,052 | —189,779 |
| Sacramento Northern | April | 271 | 259,386 | ..... | 266,111 | 55,613 | 16,808 | 2,383 | 99,019 | 181,460 | 68.2 | 84,651 | 15,820 | 45,087 | 5,795 |
| | 4 mos. | 271 | 1,039,141 | 67 | 1,062,443 | 223,651 | 72,601 | 8,586 | 350,564 | 688,231 | 64.8 | 374,212 | 62,517 | 236,116 | —24,206 |
| St. Louis-San Francisco | April | 4,601 | 8,472,937 | 547,463 | 9,722,273 | 1,716,899 | 1,730,331 | 295,214 | 3,811,659 | 8,020,631 | 82.5 | 1,701,642 | 1,014,580 | 787,073 | 858,802 |
| | 4 mos. | 4,625 | 34,648,941 | 2,565,984 | 40,013,327 | 6,637,644 | 6,837,064 | 1,070,844 | 15,076,497 | 31,447,917 | 78.6 | 8,565,410 | 4,980,705 | 3,931,187 | 3,372,113 |
| St. Louis, San Francisco & Texas | April | 159 | 405,133 | 11,003 | 440,219 | 48,580 | 35,460 | 18,536 | 150,735 | 265,675 | 60.4 | 174,544 | 86,000 | 30,168 | 40,494 |
| | 4 mos. | 159 | 1,442,873 | 43,503 | 1,587,079 | 187,272 | 139,873 | 73,403 | 577,425 | 1,023,444 | 64.4 | 563,635 | 230,376 | 131,670 | 48,778 |
| St. Louis Southwestern Lines | April | 1,569 | 5,436,247 | 85,489 | 5,731,912 | 777,335 | 772,855 | 153,522 | 1,751,986 | 3,583,052 | 62.5 | 2,148,860 | 1,211,324 | 678,359 | 512,100 |
| | 4 mos. | 1,569 | 21,914,110 | 242,400 | 22,948,381 | 2,434,141 | 2,693,765 | 605,887 | 6,900,228 | 13,334,538 | 58.1 | 9,613,843 | 5,334,588 | 3,261,652 | 2,755,193 |
| Seaboard Air Line | April | 4,146 | 10,547,023 | 1,303,497 | 12,722,203 | 2,272,249 | 2,179,530 | 355,961 | 4,458,957 | 9,807,112 | 77.1 | 2,915,091 | 1,365,932 | 1,256,001 | 1,344,892 |
| | 4 mos. | 4,146 | 43,615,393 | 5,818,580 | 53,037,637 | 9,124,977 | 8,802,970 | 1,382,307 | 17,866,964 | 39,376,234 | 74.2 | 13,661,403 | 6,555,908 | 5,753,573 | 4,977,305 |
| Southern | April | 6,344 | 18,693,824 | 1,520,812 | 21,755,783 | 3,063,690 | 3,986,803 | 394,077 | 7,662,768 | 15,943,951 | 73.3 | 5,811,832 | 2,891,628 | 2,256,216 | 2,128,757 |
| | 4 mos. | 6,344 | 73,407,822 | 6,007,093 | 85,233,268 | 11,873,768 | 15,835,070 | 1,569,262 | 30,356,369 | 62,985,086 | 73.9 | 22,248,182 | 14,061,231 | 9,051,518 | 8,604,227 |
| Alabama Great Southern | April | 316 | 1,486,789 | 73,504 | 1,689,692 | 239,228 | 391,410 | 30,353 | 575,781 | 1,303,858 | 77.2 | 385,834 | 262,836 | 166,166 | 164,588 |
| | 4 mos. | 316 | 5,516,396 | 339,065 | 6,322,130 | 898,013 | 1,542,939 | 129,370 | 2,263,163 | 5,068,359 | 80.2 | 1,253,771 | 905,958 | 526,126 | 603,429 |
| Cinn., New Orleans & Texas Pacific | April | 336 | 3,611,589 | 199,401 | 3,990,265 | 456,051 | 814,946 | 69,077 | 1,055,685 | 2,531,167 | 63.4 | 1,459,098 | 926,596 | 586,127 | 643,715 |
| | 4 mos. | 336 | 12,932,513 | 896,714 | 14,534,780 | 1,791,906 | 3,102,678 | 257,943 | 3,937,407 | 9,597,284 | 66.0 | 4,937,496 | 3,133,205 | 2,098,312 | 2,278,922 |
| Georgia Southern & Florida | April | 397 | 590,266 | 90,177 | 731,831 | 169,284 | 66,550 | 7,794 | 235,406 | 503,470 | 68.8 | 228,361 | 66,276 | 51,499 | 54,136 |
| | 4 mos. | 397 | 2,244,250 | 408,126 | 2,876,225 | 653,506 | 253,690 | 31,107 | 902,760 | 1,941,621 | 67.5 | 934,604 | 277,006 | 215,552 | 201,134 |
| New Orleans & Northeastern | April | 203 | 1,079,152 | 35,994 | 1,169,068 | 166,064 | 121,240 | 19,161 | 262,582 | 617,253 | 52.8 | 551,815 | 344,404 | 158,848 | 224,345 |
| | 4 mos. | 203 | 3,917,259 | 187,362 | 4,303,373 | 661,604 | 473,499 | 78,581 | 1,004,983 | 2,387,514 | 55.5 | 1,915,859 | 1,153,425 | 618,425 | 614,116 |
| Southern Pacific | April | 8,129 | 36,286,845 | 3,252,260 | 41,939,538 | 4,731,206 | 8,351,395 | 798,336 | 16,165,751 | 31,897,698 | 76.1 | 10,041,840 | 5,402,023 | 3,666,124 | 1,995,256 |
| | 4 mos. | 8,129 | 136,999,514 | 13,512,934 | 159,658,870 | 18,421,169 | 32,744,105 | 3,010,041 | 60,972,845 | 122,691,518 | 76.8 | 36,967,352 | 20,473,577 | 12,673,687 | 5,690,908 |
| Texas & New Orleans | April | 4,292 | 10,017,038 | 736,045 | 11,487,761 | 1,831,465 | 1,788,496 | 259,536 | 4,365,432 | 8,795,203 | 76.6 | 2,692,558 | 1,279,176 | 913,497 | 650,666 |
| | 4 mos. | 4,310 | 39,976,550 | 3,142,334 | 46,044,332 | 7,400,900 | 7,046,814 | 969,909 | 17,254,185 | 34,796,251 | 75.6 | 11,248,081 | 5,251,828 | 3,677,443 | 3,151,674 |
| Spokane International | April | 152 | 224,804 | 917 | 237,010 | 54,842 | 17,729 | 4,599 | 60,064 | 145,963 | 61.6 | 91,047 | 12,380 | 64,373 | 35,945 |
| | 4 mos. | 152 | 699,770 | 4,001 | 754,135 | 234,260 | 81,912 | 52,603 | 215,448 | 587,066 | 77.8 | 167,069 | 44,333 | 75,224 | 89,485 |
| Spokane, Portland & Seattle | April | 931 | 2,507,627 | 64,937 | 2,698,849 | 409,833 | 337,628 | 23,561 | 763,560 | 1,617,065 | 59.9 | 1,081,784 | 173,209 | 796,700 | 296,547 |
| | 4 mos. | 931 | 8,123,218 | 295,847 | 8,897,265 | 1,438,907 | 1,159,098 | 97,356 | 2,849,323 | 5,876,553 | 66.0 | 3,020,712 | 712,673 | 2,011,109 | 732,382 |
| Tennessee Central | April | 286 | 361,475 | 18,505 | 401,076 | 80,911 | 64,769 | 11,615 | 137,169 | 313,389 | 78.1 | 87,687 | 24,437 | 39,292 | 51,104 |
| | 4 mos. | 286 | 1,495,709 | 70,440 | 1,657,450 | 343,136 | 273,921 | 42,973 | 575,394 | 1,312,684 | 79.2 | 344,766 | 101,626 | 113,185 | 175,637 |
| Texas & Northern | April | 8 | 99,311 | ..... | 111,632 | 5,128 | 12,011 | 496 | 33,061 | 55,152 | 49.4 | 56,480 | 21,341 | 19,919 | 34,394 |
| | 4 mos. | 8 | 381,457 | ..... | 433,898 | 36,689 | 39,636 | 3,921 | 121,999 | 219,314 | 50.5 | 214,584 | 76,201 | 86,499 | 78,032 |
| Texas & Pacific | April | 1,846 | 5,460,463 | 388,623 | 6,353,224 | 904,985 | 959,228 | 174,437 | 2,031,297 | 4,395,967 | 69.2 | 1,957,257 | 899,628 | 693,313 | 567,714 |
| | 4 mos. | 1,846 | 21,444,109 | 1,593,583 | 24,980,247 | 3,395,209 | 3,726,868 | 657,041 | 8,254,120 | 17,279,761 | 69.2 | 7,700,486 | 3,487,265 | 2,759,244 | 2,391,997 |
| Texas Mexican | April | 162 | 276,389 | ..... | 308,419 | 70,663 | 35,055 | 7,443 | 63,669 | 196,246 | 63.6 | 112,173 | 42,241 | 41,901 | 64,130 |
| | 4 mos. | 162 | 1,002,061 | ..... | 1,121,892 | 262,720 | 123,468 | 27,124 | 249,900 | 735,010 | 65.5 | 386,882 | 152,058 | 151,308 | 224,211 |
| Toledo, Peoria & Western | April | 239 | 525,134 | ..... | 532,572 | 113,555 | 39,574 | 37,782 | 113,024 | 331,935 | 62.3 | 200,637 | 106,196 | 55,957 | 55,361 |
| | 4 mos. | 239 | 2,376,489 | 2 | 2,405,308 | 322,013 | 149,008 | 172,941 | 534,120 | 1,308,905 | 54.4 | 1,096,403 | 568,207 | 320,850 | 270,642 |
| Union Pacific | April | 9,720 | 36,129,791 | 2,458,715 | 41,440,344 | 6,534,720 | 8,017,012 | 942,312 | 14,895,064 | 32,380,327 | 78.1 | 9,060,017 | 5,781,740 | 1,711,297 | 992,644 |
| | 4 mos. | 9,720 | 135,320,588 | 10,396,457 | 156,137,749 | 19,860,546 | 31,391,768 | 3,569,093 | 56,505,837 | 119,283,837 | 76.4 | 36,853,912 | 24,022,524 | 8,030,691 | 5,764,243 |
| Utah | April | 110 | 51,949 | ..... | 51,964 | 21,050 | 47,051 | 844 | 35,532 | 111,508 | 214.6 | —59,544 | 11,405 | —61,946 | —41,574 |
| | 4 mos. | 110 | 341,799 | ..... | 342,878 | 69,234 | 202,860 | 3,216 | 189,934 | 494,375 | 144.2 | —151,497 | 45,232 | —163,543 | —115,638 |
| Virginian | April | 643 | 3,613,108 | 2,004 | 3,764,166 | 436,879 | 800,225 | 40,665 | 798,766 | 2,173,678 | 57.7 | 1,590,488 | 1,014,000 | 727,598 | 913,534 |
| | 4 mos. | 643 | 13,903,490 | 8,860 | 14,396,332 | 1,582,814 | 3,038,180 | 162,740 | 3,183,773 | 8,315,712 | 57.8 | 6,080,620 | 3,956,500 | 2,903,476 | 2,108,186 |
| Wabash | April | 2,393 | 8,497,269 | 376,479 | 9,534,425 | 1,292,592 | 1,200,820 | 292,362 | 3,796,168 | 6,953,999 | 72.9 | 2,580,426 | 1,146,082 | 896,923 | 625,778 |
| | 4 mos. | 2,393 | 33,363,984 | 1,635,872 | 37,611,104 | 4,481,449 | 4,816,151 | 1,075,984 | 15,346,028 | 27,065,126 | 72.0 | 10,545,978 | 4,584,186 | 3,715,815 | 2,470,190 |
| Ann Arbor | April | 294 | 729,798 | ..... | 737,229 | 86,719 | 113,064 | 26,132 | 312,081 | 557,625 | 75.6 | 179,604 | 84,108 | 67,853 | 119,474 |
| | 4 mos. | 294 | 3,031,896 | ..... | 3,057,459 | 312,545 | 429,922 | 97,368 | 1,270,709 | 2,180,718 | 71.3 | 876,741 | 410,650 | 350,689 | 396,470 |
| Western Maryland | April | 837 | 3,763,968 | 5,904 | 3,965,054 | 582,034 | 818,205 | 78,403 | 1,225,151 | 2,859,496 | 72.1 | 1,105,558 | 669,000 | 646,065 | 719,430 |
| | 4 mos. | 837 | 15,686,862 | 28,757 | 16,458,313 | 2,169,212 | 3,188,034 | 310,741 | 5,149,363 | 11,432,024 | 69.5 | 5,026,289 | 2,952,000 | 2,888,468 | 2,039,080 |
| Western Pacific | April | 1,193 | 4,443,574 | 203,548 | 4,737,456 | 645,196 | 632,059 | 153,864 | 1,288,430 | 2,958,041 | 62.4 | 1,779,415 | 886,369 | 825,207 | 415,904 |
| | 4 mos. | 1,193 | 16,650,587 | 874,090 | 17,858,343 | 2,280,966 | 2,582,906 | 675,229 | 4,971,876 | 11,393,023 | 63.8 | 6,465,320 | 3,001,810 | 3,117,287 | 1,465,342 |
| Wisconsin Central | April | 1,051 | 2,527,813 | 40,604 | 2,699,524 | 391,364 | 409,489 | 64,247 | 1,054,211 | 2,020,046 | 74.8 | 679,478 | 144,693 | 315,598 | 165,735 |
| | 4 mos. | 1,051 | 8,985,317 | 133,589 | 9,570,119 | 1,233,828 | 1,951,599 | 250,808 | 4,317,120 | 8,132,162 | 85.0 | 1,437,957 | 631,140 | 44,289 | 528,291 |

# A MERITED TRIBUTE

R. W. MORRISON, Deceased

## To R. W. MORRISON, deceased, a true pioneer in promoting Diesel Electric Freight Road Locomotives:

The Texas Mexican Railway Company was chartered as a steam railroad in 1875. Construction was completed between Corpus Christi, Texas, and Laredo, Texas, in 1881. It gave the first railway service to a virgin and sparsely settled area. Survival was a struggle until 1939, during which period it was scantily powered and scantily maintained.

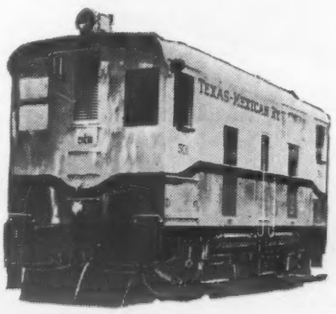
In 1938 R. W. Morrison, who then resided in San Antonio, Texas, was tendered the presidency of The Texas Mexican Railway Company. He had retired from the utilty business. In that business he had acquired a thorough knowledge of the value of Diesel electric over steam power, and had visioned its possibilities in rail freight service. Morrison foresaw that if the railroads of the United States would supplant steam with Diesel electric power, economies effected would go far toward strengthening their then depressed financial condition. His reply to the tender was that if he should be permitted to demonstrate the practicability of his idea by fully dieselizing all locomotive power on The Texas Mexican Railway Company, he would accept its presidency at a salary of $1.00 per year. The company could not do the necessary financing, but it was agreed that $250,000.00 would be made available to aid the switch-over, provided Morrison could arrange the balance of the financing. He undertook the job. Assistance from the Reconstruction Finance Corporation was first sought, but was denied. He was advised that its engineers vetoed practicability of Diesel electric freight road locomotives. He could get no relief through the Interstate Commerce Commission because the Certificate essential to issuance of Equipment Trust Certificates could not be supported.

Undaunted Morrison accomplished the necessary financing. Baldwin Locomotive Works contracted to build, built and delivered seven small Diesel electric road locomotives to meet his ideas. They were put in operation. By the latter part of 1939 steam locomotives were being junked; water tanks along the line were soon dismantled; and The Texas Mexican Railway Company was thrown on its own as the first Class I Railroad to exclusively use Diesel electric road locomotives. Crude as they were, they exceeded in performance his expectations. Their resemblance to the modern Baldwin and General Motors Diesel electric locomotives now in operation on the road would be about that of a Model "T" to the latest Cadillac. During his struggle practically every operating man to whom he talked scouted to Morrison his advocacy of Diesel electric freight road locomotives. But they never shook his confidence.

The latest statistics available to us with respect to new locomotives for Class I railroads show that on May 1, 1951, there were 2,363 power units on order: 2,337 Diesel electric, 18 steam, 8 electric, and that in the first four months of 1951 there were 838 new locomotives installed: 834 Diesel electric, 4 steam.

Where is the informed man today who would veto practicability of Diesel electric freight road locomotives, or, who would say that, measured by its operating costs and performance, steam is superior to Diesel electrics for road service?

Morrison had confidence and determination; vision and unfaltering courage. The lending of his personal resources to vindicate that vision was a boon to The Texas Mexican Railway Company. He did not live to see the full achievement of his vision, but The Texas Mexican Railway Company now gratefully pays homage, through this factual tribute, to the memory of R. W. Morrison, a real and courageous pioneer in demonstrating the practicability and economic value of Diesel electric freight road locomotives.



The 501. First-of seven Diesel electric locomotives placed in service in 1939.

GOING PLACES . . .

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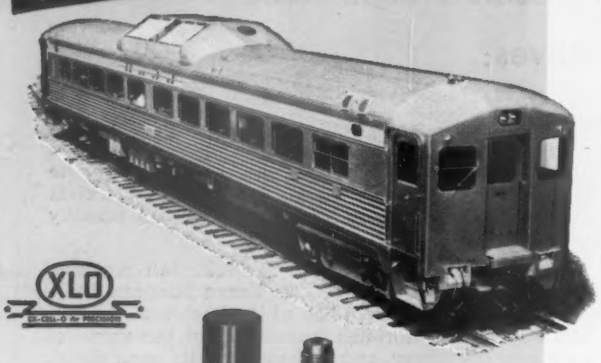

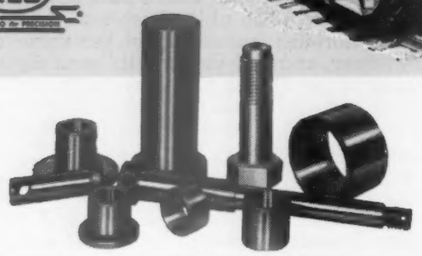

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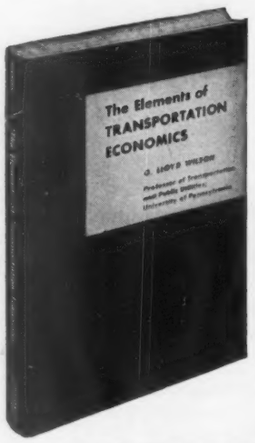


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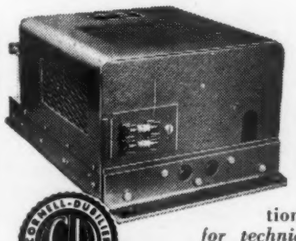

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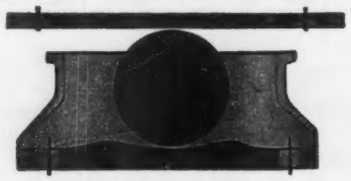

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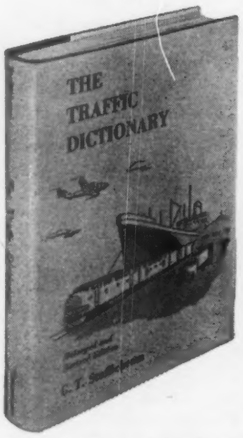


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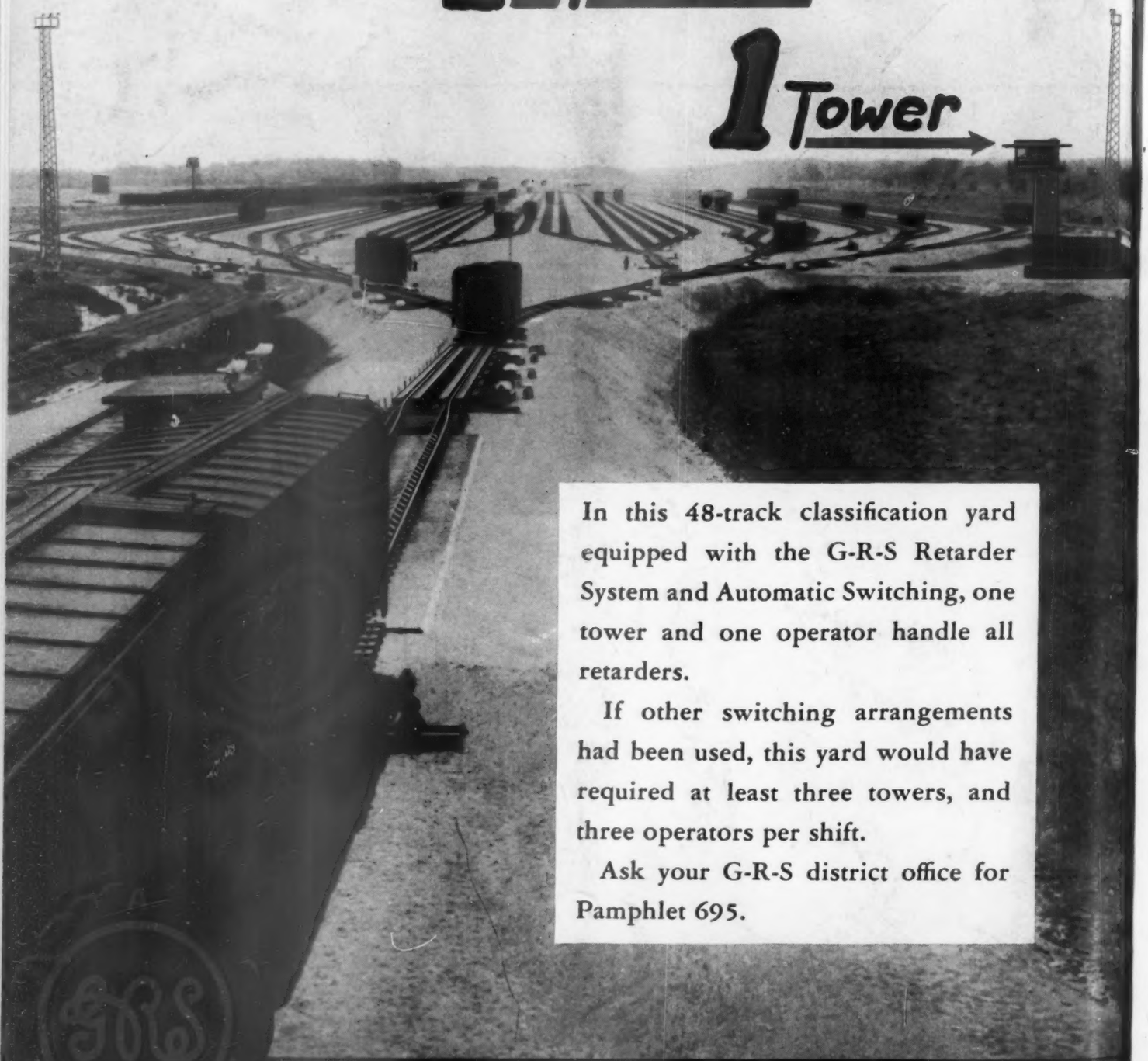

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